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SECTOR 10 — CHART INFORMATION

SECTOR 10

FALKLAND ISLANDS, SOUTH GEORGIA, AND THE SOUTH SANDWICH ISLANDS

Plan.—This sector describes the Falkland Islands as well as the South Georgia and Sandwich group. The narrative begins with East Falkland Island, followed by descriptions of the Falkland Sound and the West Falkland Island, and finally the South Georgia and the South Sandwich Islands.

General Remarks

10.1 Winds—Weather.—In the vicinity of the Falkland Islands strong winds between NW and SW predominate, and gales are reported to be less frequent than on the Pacific Coast of South America. Squalls are common and occasionally violent.

In the vicinity of South Georgia any anchorage close to high ground is subject to very violent Katabatic winds or williwaws when a strong wind is blowing from shore. Small vessels can often find areas of comparative calm close under the steep coast. Main valleys frequently accelerate winds blowing along them into fierce squalls.

Vessels visiting South Georgia should be prepared for strong winds from any direction at the various harbors, as these winds may be purely local and depend entirely on the land formations.

Vessels S of 40°S should keep a good lookout for icebergs and loose ice.

Most of the ice encountered on the open sea comes from the ice shelves surrounding the Antarctic continent, and after initially drifting N and W, later become involved in the S Ocean Current. On the Atlantic side of the continent, the general NE drift through Drake Passage, becomes N towards the Falkland Islands and Rio de la Plata, and takes with it occasional icebergs.

Wherever there is a risk of icebergs, vessels should proceed with caution, keeping a good lookout both for bergs and for the smaller pieces of ice which may sometimes serve as a warning of the proximity of larger icebergs. The number and size of icebergs varies greatly from year to year so that the experience of one or two voyages should not be relied on for future occasions.

There is little evidence of icebergs of Antarctic origin being encountered in the channel and inlets of Patagonia, and most of them are free of ice throughout the year.

There are, however, a number of glaciers which occupy the valleys at the heads of some of the more landlocked inlets.

Most of these do not reach the sea, but some provide a local source of icebergs which, from time to time affect certain channels.

South Georgia lies between the mean and extreme limits of the packs of ice throughout the year.

Off the N coast, watch should be kept for growlers which are continually breaking off from the numerous glaciers during the summer and drifting out to sea.

They are frequently of a dark green color, and when difficult to distinguish.

Tides—Currents.—The Falkland current flows NE on the W side of the Falkland Islands and continues toward Rio del Plata. This current may be regarded as occupying the E half of the passage between the Falkland Island and the coast of Argentina. Farther W, it weakens and becomes more variable; between 20 and 50 miles from the coast, where the movements are in part tidal. It has been reported that S sets are stronger and run longer than those setting to N.

Strong winds may cause appreciable currents in this area. A strong NW set in January has been reported between Estrecho de le Maire and the Falkland Island.

The average strengths of the currents in this whole area are moderate rather than strong, but due to the unsettled and stormy character of the region, strong currents may be expected well in excess of the average values quoted.

The average rate of the current over most of the area is less than 0.5 knots; it is highest in the Cape Horn current and in the S to SE current within 60 miles of the W and S coast of Chile, S of 51°S.

The tidal currents, in different parts of the Falkland group, differ much with regard to strength and direction. The flood comes from SE and splits off Lively Island; one part running N, the other part running SW past Sea Islands, at a rate of 1 to 2 knots near the coast.

Along the S, W, and N coast, it increases in strength towards Jason Islands, off the NW coast, where it runs at a rate of 6 knots and causes heavy and dangerous races.

The flood enters Falkland Sound at both ends, meeting near Swan Island, and causing a double HW.

During and after lengthy SE gales, with a heavy sea which rolls in on the S and SE coasts of the Falkland Islands, a strong NW set has been experienced. This set has been attributed to the loss of several vessels in the vicinity of Bull Point.

Aspect.—The Falkland Islands, which are a Crown Colony of Great Britain, comprise the only notable group in the South Atlantic. The Falkland Islands form a group of over 100 islands that lie nearly 300 miles E of the entrance to Estrecho de Magallanes.

South Georgia and the South Sandwich Islands are considered to be Falkland Island dependencies, and as such are subject to the authority thereof. Many years ago, South Georgia and Southern Thule were the only islands of the South Georgia and the South Sandwich Islands permanently inhabited by small scientific staffs at King Edward Point and Ferguson Bay.

East Falkland and West Falkland Islands are separated by Falkland Sound, the width of which varies from about 2 to 12 miles. The entire group takes up an area of about 4,700 square miles and is indented by sounds and bays which form excellent harbors. Stanley is the principal port.

South Georgia, barren and mountainous, lies about 700 miles ESE of the Falkland Islands and has an area of 1,450 square miles. The South Sandwich Islands are comprised of an archipelago of islands connected by a low submarine ledge.

Zavodovski, the N most island of these, lies about 297 miles ESE of South Georgia.

For the most part the appearance of the Falkland Islands is not striking. There are ridges of rocky hills, more than 300m high, which traverse extensive tracts of moor land. These treeless areas are bound by a low, rocky coast.

The hills on the N part of East Falkland rise to a considerable height while the S part is low and can barely be seen at a distance of 5 miles. Wickham Heights, the main range of hills, stretch E and W, and end in Mount Osborne, 684m high.

West Falkland is slightly greater in elevation than East Falkland. The highest peak, Mount Adam, rises to a height of 698m in the N part of the island. On the W face, and on some of the adjoining islets, are some steep cliffs exposed to the fury of the W seas. The rugged summits of the hills and mountains end in points and ridges.

South Georgia is high and consists of very steep glacier-covered mountains, and presents the features of a deeply dissected upland. Mount Paget, the summit of the Allardye Range, rises to 2,934m near the center of the island.

In summer, the lower hills near the coast appear to be a light brown color, being free from snow and in most cases covered with tussock and moss. There is but little flat land and the island, except for the tussock, is almost entirely barren, the SW side, except for Fanning Ridge (paragraph 10.78) and Nunez Peninsula (paragraph 10.729, being permanently ice-covered.

The coasts, especially the N, are deeply indented, reducing the island in places at the W end to a few hundred meters in width. Large quantity of loose ice in the bay renders them inconvenient during a great part of the year for a vessel to lie in on account of the calving of large parts of the ice cliffs, which break off and float to sea.

The second largest glacier in the island is the Nordenskjold Glacier, in Cumberland East Bay; the largest is the Esmark Glacier in Holmestrand (paragraph 10.79). The summer is the worst time, as the heat of the sun causes large pieces to break off the glaciers. The larger icebergs, however, originate from the Antarctic mainland, but they are of too great draft to penetrate far into the bays.

Most of the South Sandwich Islands are of a volcanic nature, some being active. Snow and poor visibility are frequent, making the islands difficult to approach. All of these islands are uninhabited.

Kelp grows on just about every danger with a rocky bottom, and no vessel should pass through it unless the spot has been carefully examined and sounded. Many dangers, however, are not marked by kelp. A heavy sea sometimes tears the weed from the rock or a moderate tidal stream or current draws it under water and out of sight.

Kelp can grow, in some places, from depth of 55m, and in many parts of the coast thick beds of weed exist without having a depth of less than 10m near it. Growing kelp should invariably be considered as a sign of danger. It forms long streamers, level or just beneath the surface of the sea, and shows an occasional leaf.

Never pass through growing kelp if it can be avoided, and give it a wide berth if passing on the up-stream side. A clear patch of water in the middle of a thick growth of kelp often indicates the position of least depths over the danger.

Dead kelp, which has broken away from the bottom, float in curled masses, with leaves showing above the surface. It sometimes drifts in long lines. It is reported that kelp often gives a strong radar echo, particularly at LW.

Steam vessels are warned that condensers will foul with small marine life in the vicinity of the Falkland Islands. The fouling can be reduced by limiting the use of deck lights at night.

Directions.—Vessels approaching from N at about 60°W longitude, can in thick weather, get a good check on their longitude utilizing the edge of a bank lying off the E coast of Argentina. On this bank the depths decrease from more than 183 to 110m, with a sandy bottom, over a distance of 10 miles. When at latitude 49°30'S, the vessel will have reached the edge of the bank N of the islands.

On the outer part of this bank there are depths of 145 to 155m, over fine dark sand. The edge of the bank, about 50 miles NE of **Cape Carysfort** (51°25'S., 57°50'W.), shows up rather distinctly on a fathometer trace.

10.2 Burdwood Bank (55°00'S., 60°00'W.), which lies about 90 miles S of the Falkland Islands, has a bottom which is mostly coral and is steep-to on its N and S sides. This bank, which is best seen on the chart, has depths from about 43 to 144m and is 200 miles long.

Off the Falklands, penguins may be encountered 300 miles from land. Therefore, they need not cause alarm. One sign well worth noting is the presence of the cormorant, which is rarely seen more than 10 miles off the land.

Eddystone Rock situated in the N entrance to the North Falkland Sound, should be seen from N, with a clear horizon on a dark night before a vessel would run into danger, as it is steep-to. However, if not sure of longitude vessels should not, at night, proceed within depths than 100m.

The first appearance of the land is very unfavorable. This aspect is due to the rugged hills, whose summits are stony and very light colored, which gives the notion that the highland is always covered with snow.

However, snow is rarely present from October to May, though patches sometimes remain in the hollows until November.

Vessels approaching from S at night or thick weather, will find soundings to be of little help.

Beauchene Island (52°55'S., 59°12'W.) should be passed to the E, then a course of 038° should be steered for about 60 miles, having due regard for currents.

Vessels approaching South Georgia should keep in mind that most of the approaches and offshore areas, particularly on the SW side, are inadequately surveyed, and caution should be exercised.

Caution.—Mine clearance work within the Falkland Islands coastal waters has been completed and hazards to shipping have been marked; restrictions on vessels entering these waters imposed during the recent hostilities have, therefore, been lifted, with the exception of special arrangements for Argentine registered vessels wishing to enter a zone 150 nautical miles around the islands. However, the possibility remains of discovering hazards to navigation in the future.

Mariners wishing to transit these waters or to enter Falkland Island harbors are advised to contact the Queen's Harbor Master, Stanley, on VHF channel 16.

East Falkland Island

10.3 Cape Dolphin (51°14'S., 58°58'W.) is the NW tip of the island and is shaped like a rounded finger pointing to Eddystone Rock. Cape Dolphin is the tip of a peninsula that rises to a height of 55m. The peninsula ends at the cape in cliffs about 21.3m high. Cerro Montevideo, which has a rounded summit that rises to a height of 292m, is located about 17 miles S by E of Cape Dolphin. This peak is visible over the promontory and provides a good landmark for vessels approaching Falkland Sound from E or NE.

Eddystone Rock (51°12'S., 59°02'W.) is conspicuous and rises to a height of 45m. At a distance of about 8 miles this rock looks like a vessel under sail and appears to have a small stone cairn on its peak. Also, this islet is radar conspicuous and is apparently steep-to.

Vessels should give Eddystone Rock a berth of at least 0.5 miles, as it has not been closely examined.

Caution.—A shoal with a depth of 13.6m lies about 2 miles SE of Eddystone Rock. Shallower depths may exist nearby.

A turbulent race, that lies between Cape Dolphin and Eddystone Rock, is dangerous to small vessels. With N winds a heavy sea prevails along the coast from Cape Carysfort to Cape Dolphin.

A shoal area lies about 0.7 mile WSW of Cape Dolphin, and it is marked by kelp. A rocky ledge, marked by kelp, projects about 0.2 mile NW of the above cape.

The channel, between the kelp marking the shoal and the kelp marking the ledge, has a least depth of 17.1m, and provides safe passage for small vessels with local knowledge.

10.4 Cape Bougainville (51°18'S., 58°28'W.) lies 19 miles ESE of Cape Dolphin, and between these capes the coast recedes, into which a indraft has been observed.

Lion Point lies about 4 miles W of Cape Bougainville. About 4 miles off Lion Point there are depths of 73.2 to 82.3m, over fine greenish sand with small black specks, decreasing gradually to 21.9m close inshore. Concordia Rock, 15.2m high, lies about 1 mile WNW of Lion Point.

Sea Lion Point (51°21'S., 58°19'W.) lies 5.75 miles SE of Cape Bougainville; kelp extends up to 0.7 mile NE from the point. An islet lies 0.2 mile E of Sea Lion Point.

Port Salvador Passage is entered about 9 miles E of Cape Bougainville between Shag Island and **Hut Point** (51°24'S., 58°17'W.). The depths in this channel range from 24.7 and 34.7m. The bottom here is sand and shell with bare patches or rock, providing poor holding ground.

This inlet is difficult to enter due to the narrow entrance, and to the strong tidal currents which sweep the kelp underwater and cause races in many sections.

There is a rocky shelf, with a depth of 14.9m, that projects about 1.1 miles NNW of Hut Point. Also, there is a depth of 11.8m 0.7 mile NNW of Hut Point. Mid Rock, which dries 0.6m, lies in the center of the entrance channel 1.5 miles SW of Hut Point.

Center Islet and Rat Islet lie, respectively, 2.25 and 3.75 miles SSW of Hut Point. Both above islets are tussock-covered and steep-sided above the HW mark. The surrounding land of the inlet is, for the most part, rough and grass-covered, with some sandy beaches. Mostly all the coastline and reefs in this vicinity are kelp-fringed.

Within the inlet are four primary settlements. A wool shed, with a jetty with 3.7m alongside, lies on the N side of the entrance of Rincon del Moro Creek at Douglas Station, about 5 miles NW of **Big Point** (51°28'S., 58°25'W.).

A settlement with a boat jetty lies on the S side of Teal Inlet, about 5 miles S of Big Point. A wool shed with a jetty is located on the E side of Foam Creek about 6 miles SSW of Hut Point. Salvador Settlement, with a jetty that dries out, lies in a small creek about 4 miles SW of Hut Point.

Tides—Currents.—Currents off the entrance to Port Salvador run at a rate of about 2 knots, with the ebb current being slightly stronger than the flood. There is a race which runs N on the ebb, 0.3 mile E of Big Shag Island.

In the channel W of Centre Island the ebb attains a rate of 5.5 knots at springs, and the flood 4.5 knots. In the channel E of the above island the currents are somewhat less. The ebb current causes a violent race N of the island.

For the most part, the tidal current changes approximately 1 hour after HW and LW, but this may be altered considerably by weather conditions. There is relatively little slack water. Strong eddies may be met along the edges of the channel.

Inside the inlet the tidal currents are weak, except between some of the islands, where they seldom exceed 1.5 to 2 knots.

Anchorage.—Having cleared the entrance channel, good and secure anchorage is found all over the harbor outside the limits of the kelp. Nearly all the dangers are visible.

A secure anchorage is situated about 0.6 mile SW of the jetty at Salvador Settlement, in about 7m, mud.

Directions.—The best time to enter Port Salvador is 0.5 hour after LW, with the last of the ebb current still running.

The best time for departure is about 1 hour after LW when the flood is just commencing. At these times the kelp on the dangers will be visible.

Vessels from N should pass about 0.4 mile E of **Big Shag Island** (51°24'S., 58°19'W.). Then a course should be shaped to pass W of both Mid Rock and Centre Island and then E of Rat Island.

The channel E of Centre Island is not recommended because of shallower depths, and the dangers are not all marked by kelp.

10.5 Cape Frehel (51°23'S., 58°12'W.) lies about 3 miles ENE of Hut Point. Armantine Rocks, comprised of two areas which dry, lie about 1 mile N of Cape Frehel.

Due to the foul ground which projects SE from these rocks, vessels should remain at least 1.5 miles offshore to clear these dangers.

Macbride Head (51°22'S., 57°59'W.) is a cliffy point. Cape Carysfort, also cliffy, lies about 6 miles SE of Macbride Head, and can be passed safely at a distance of 1 mile. Cow Bay lies close S of Cape Carysfort and may be recognized by its white sandy beach and bluff land around the cape.

Foul ground projects 0.7 mile offshore from Cape Carysfort almost to the head of the bay, and also 0.6 mile off the S entrance point of the bay.

Vessels may find anchorage, open to the E, in Cow Bay in depths of 12.8 to 14.6m, sand.

Volunteer Point (51°31'S., 57°44'W.) has an archipelago of rocky islets extending 1 mile ESE.

Uranie Rock, awash, lies 1.5 miles E of the point. It is not marked by kelp; the sea seldom breaks on the rock during W winds. The point is marked by a light.

Directions.—To pass about 2 miles to seaward of Uranie Rock vessels should keep Cape Carysfort bearing less than 305° until **Mount Low** (51°38'S., 57°49'W.) bears 228°, or at night with Cape Pembroke light bearing more than 198°.

Vessels can then begin to change course to bring Mount Low ahead.

Mount Low is the E most hill on East Falkland Island, on a clear night the hill may be easily seen from N of Volunteer Point. This hill's summit rises to a height of 256m, and forms two peaks.

10.6 Berkeley Sound (51°35'S., 57°45'W.) is entered between Eagle Point on the N and Kidney Island on the S. This sound has four excellent anchorages in its W part, namely, Uranie Bay, Johnson Harbor, Stag Road, and Port Louis Harbor.

Johns on Harbor is situated in the NW part of Berkeley Sound and is entered E of **Duclos Point** (51°32'S., 58°01'W.).

Sea Lion Rocks, and a rock marked by kelp, with a depth of 4.6m, lie respectively, about 1 mile ESE and 1 mile SSW of Duclos Point. The shores of Johnson Harbor are bordered by a rocky bank.

Banks of kelp project out to depths of 11m and reduce the navigable width of the entrance channel to Johnson Harbor to about 0.65 mile. Also, the passage between Duclos Point and Sea Lion Rocks, is shallow.

A patch of foul ground, marked by kelp, lies near the center of the harbor. The kelp, which projects from the above foul ground, and that from Lamarche Point, narrows the passage between to about 0.3 mile.

Chabot Creek is situated in the NW corner of Johnson Harbor and is shallow. Johnson Harbor settlement, with a jetty, stands on the NE shore of the creek. A 2.1m patch lies 0.8 mile SE of Chabot Point, the SW entrance point to the creek.

Magellan Cove forms the NE corner of the harbor. An uncharted patch, marked by kelp, was reported to lie in Magellan Cove.

There is an anchorage, as charted, about 0.9 mile NW of Lamarche Point, in a depth of 11m, mud.

Directions.—Vessels heading for Johnson Harbor or Chabot Creek should steer for a position 0.5 mile S of Monkey Point. Then head NW keeping 0.5 mile offshore until Lamarche Point is abeam. Course may then be changed for Magellan Point.

When clear of the foul ground in the center of Johnson Harbor, vessels may anchor as above.

Reporting requirements are reported to be in effect for Berkeley Sound. See paragraph 10.11 "Stanley Harbor—Regulations" for details.

10.7 Stag Road (51°32'S., 58°05'W.) is entered between Duclos Point and Peat Islet, 1.75 miles WSW. Shoals project up to 0.4 mile offshore between Duclos Point and Grave Point, about 0.6 mile W.

A dangerous rock lies about 0.5 mile W of Grave Point and another dangerous rock lies about 0.3 mile NNW of Peat Islet.

Numerous dangers marked by kelp, and best shown on the chart, lie in close proximity to Peat Islet.

Stag Road provides a better anchorage for large vessels than Johnson Harbor. For the most part, vessels can anchor, as charted, in depths of 8 to 11m. The best berth is between Hog Island and the N shore.

During daylight the approach to Stag Road may be made without difficulty. Vessels should steer to pass 0.6 mile S of Duclos Point and then to the anchorage. Dangers on both sides are marked by kelp.

Port Louis Harbor (51°33'S., 58°08'W.) is situated at the W end of Berkeley Sound, and is entered S of Peat Island and Hog Island, and N of Long Island.

A rocky patch, nearly in mid-channel, and a rocky islet 0.4 mile NNE of the W end of Long Island, narrows the main passage to a width of about 183m.

Celery Island (Round Island) lies about 0.35 mile NNE of the W tip of Long Island. A rocky shoal, parts of which are above-water, lies 1.5 miles W of Round Island.

Green Patch Settlement, where there is a jetty, is located about 2 miles WSW of Round Island. There is a derelict jetty 0.75 mile W of the settlement.

The Carenage is a round lagoon located on the N side of Port Louis. It has depths of 0.9m and is entered by a channel 91m wide.

Deputy Harbor is located on the S side of Port Louis. This narrow inlet is entered about 1.25 miles SSW of Round Island via a channel 91m wide and has depths from 1 to 5m.

Small vessels can anchor, as charted, about 0.2 miles S of Carenage in a depth of 5m.

Directions.—Vessels heading for Port Louis steer to pass midway between the 4.6m rock, situated 0.9 mile SSW of Duclos Point, and a 7.3m rocky shoal, 0.4 mile further SSW.

Both of these dangers are marked by kelp and are often radar conspicuous. Vessels should then head to pass midway between the N tip of Long Island and the rocky islets S of Hog Island.

Then pass about 0.1 mile N of Round Island, anchoring as directed above.

10.8 Long Island (51°33'S., 58°05'W.) is situated about 2 miles SSW of Duclos Point. Between its E tip and the above 4.6m rock is a rocky shoal, marked by kelp, with depths of 7.3 to 11m. The W end of the island is joined to the S shore by a narrow sandy ridge 0.5 mile long.

Uranie Bay is situated at the W end of Berkeley Sound, S of Long Island.

Although this bay is open E, it is sheltered from S and W by rugged coastline and thin hills. Also, it is encumbered by kelp to the S and E, but the bay is clear in the center. There is good holding ground and shelter in the center of Uranie Bay. Margaret Hill is a conspicuous peak situated about 3 miles SSE of the E tip of Long Island.

Mount Round, 157m high, with a cairn on its summit, lies 1 mile E of Margaret Hill. Long Island House, also conspicuous, lies about 2 miles SW of the E tip of Long Island.

10.9 Port William (51°40'S., 57°42'W.), which also provides access to Stanley Harbor, is entered between Mengeary Point and Cape Pembroke, 2.25 miles S.

Port William affords good anchorage with shelter from the prevailing W wind, but NE gales send in a heavy sea.

Mengeary Point (51°39'S., 57°43'W.) is the low, rocky tip of the long narrow tongue of land which separates Berkeley Sound from Port William.

Kidney Cove, 1.25 miles NW of Mengeary Point, offers good sheltered anchorage for small vessels with local knowledge off the sandy beach on the SW side of Kidney Island, which is 32m high and lies 0.2 mile offshore. Cocoon Island, 21m high, lies 0.25 miles NW of Kidney Island.

Hutchison Shoal, with 10.9m, lies 1 mile ENE of Mengeary Point. Except at slack water, this rocky shoal is clearly marked by tide rips. A rocky shoal with a depth of 9.4m, lies almost 3 miles ESE of Mengeary Point.

Charles Point lies on the N shore of Port William about 2 miles WSW of Mengeary Point. High Rock, 10.4m high and prominent from SW, lies close off the E side of Charles Point.

Sparrow Cove, on the N side of the inlet, is entered between Arrow Point, about 0.5 mile W of Charles Point, and Sparrow Point, about, 0.3 mile further W. Sparrow Cove affords good anchorage to vessels in all weathers.

Caution.—There is danger from semi-buoyant plastic land mines on the beaches of Port Williams. Tidal actions may transport the mines as far Port Harriet (paragraph 10.12).

Mariners considering beach landings should first contact the shore authorities or up to date information on mine clearance (see "Caution" section of paragraph 10.1).

Reporting requirements are in effect for Port William. See paragraph 10.11 "Stanley Harbor—Regulations" for details.

10.10 Cape Pembroke (51°41'S., 57°42'W.), the S entrance point to Port William, is the tip of a lengthy white isthmus which makes up the S side of the inlet. The light tower on the point provides a conspicuous radar target.

Due to a rocky ledge extending from the cape, it should be given a berth of at least 1 mile. Seal Rocks lie about 1 mile ENE of Cape Pembroke, and are steep-to on all sides. A shoal, with a depth of 9m, lies 0.25 mile E of Seal Rocks.

Billy Rock, which dries 1.6m, lies 0.4 mile NE of Cape Pembroke. There is a little kelp close around, and deep-water close to its E side.

Tussac Islands, which lie about 0.5 mile off the S shore of Port William, are comprised of islets that are steep-to beyond the kelp. The Viper, a rock which dries 1.6m, lies close E and a rock, awash, close W of the E islet.

Fripp Rock, with a depth of 13.8m lies 1.25 miles NW of Cape Pembroke. Kelly Rocks, which are above-water, lie W of the Tussac Islands.

A conspicuous radar scanner stands near Stanley Airport. A buoy is moored about 0.4 mile NW of Yorke Point marking the seaward end of a submarine pipeline. All vessels should pass N of this buoy.

Tides—Currents.—Off the SE side of Falkland Islands the tidal currents are weak. A current, with rates of 0.5 to 1 knot, will generally be found setting with the wind. After passing NE of the entrance to Port Harriet, a strong tidal current begins to be felt. Having passed Wolf Rock, the current setting NE becomes stronger as it approaches Cape Pembroke, round which it runs at a rate of 2 to 3 knots. Then it runs directly N past Seal Rocks to Volunteer Point, very little current being felt in either Port William or Berkeley Sound. The S current is equally strong and, during strong winds, a heavy tide-rip extends 2 miles off Cape Pembroke.

Anchorage.—Shelter from NW or NE gales can be found off the N shore of Port William, good holding ground. The bottom consists of soft sand E of **Doctor Point** (51°39'S., 57°49'W.), and of soft mud W. Vessels should avoid anchoring S of Sparrow Cove as the depths drop quickly to 12.2m forming a bar, and in NE gales the sea becomes a continuous roller. The best berth, for a vessel of deep draft, can be found SW of Doctor Point.

Directions.—For the most part entry into Port William should present no problem, however, vessels should avoid kelp. Between **Yorke Point** (51°41'S., 57°47'W.) and Arrow Point, 0.7 mile N, the edges of the kelp banks are a sure guide.

The only dangers not marked by kelp are the 9.4m shoal, 3 miles ESE of Mengeary Point, and Fripp Rock.

Vessels approaching from N should, after rounding Uranie Rock, steer for the lighthouse on Cape Pembroke until Port William opens up. Some white sand hills will then be seen ahead, close to Kidney Island, and at the same time Seal Rocks will be on the horizon clear of Cape Pembroke.

From the S vessels should keep **Mount Low** (51°38'S., 57°50'W.) bearing 010°, which leads towards the coast S of the entrance to Port Harriet. Wolf Rock and Cape Pembroke will then be seen, and course can be made for Port William.

With a flood current vessels should guard against being set towards Cape Pembroke or Seal Rocks.

A vessel leaving Port William with the out-going tidal current and intending to pass between Billy Rock and Seal Rocks should guard against being set on to the former.

No tidal current will be felt until the vicinity of Billy Rock is reached, when a strong S current outside the inlet will be met, which has the effect of setting the vessel on to it.

10.11 Stanley Harbor (51°42'S., 57°50'W.) ([World Port Index No. 14000](#)), a landlocked basin, is entered between Engineer Point on the E, and Navy Point on the W. A submarine cable lies between these two points. The town of Stanley stands on the slopes of Murray Heights on the S shore.

Tides—Currents.—Under normal conditions, the tidal currents in the entrance to Stanley Harbor attain rates of 0.5 knot at springs, but may be increased up to 3 knots.

Depths—Limitations.—This excellent harbor has general depths from 6 to 10m, gray mud, with shoal depths, marked by kelp, bordering its shores. A rock with a depth of 6m, was reported to lie about 0.5 mile NW of Navy Point.

A number of partially ruined jetties exist on the S side of the harbor. The only usable ones are the Falkland Island Company's East Jetty, with a depth of 3.7m alongside its head;

the Public Jetty, with a depth of 3.6m alongside its head; and the Government Jetty, with a depth of 3.1m alongside its head.

The oiling jetty, situated on the N side of the harbor 0.5 mile W of Navy Point, has a depth of 3.3m alongside. An immobile vessel was berthed there, enabling others to lie outboard of it, in depths of at least 4.3m.

The Falkland Island Port and Storage System (FIPASS), a 305m long floating quay, is located at the SE end of Stanley Harbor, 0.5 mile of Engineer Point. It comprises 6 pontoon barges secured by mooring dolphins and linked together to provide quay and storage facilities. It is connected to the shore via a seventh barge and a 235m long causeway. There are charted depths of 5.6 to 6m alongside.

Aspect.—There is a conspicuous spire of a cathedral situated about 1.2 miles WSW of Navy Point. Government House, situated 0.5 mile W of the cathedral is prominent.

A rotating radar scanner is at the airport, about 2 miles E of Navy Point. A three-masted stranded wreck lies in Whalebone Cove, about 0.5 mile ENE of the FIPASS facility.

Four prominent tanks lie 0.2 mile SSE of the Government House.

A prominent pavilion lies 0.5 mile SW of the Government House. also, there are a number of conspicuous radio masts painted red and white, 0.75 mile ESE of the cathedral. The hospital, a gray building with a green roof, lies about 0.1 mile SW of the Government Jetty.

A conspicuous white satellite dish aerial stands close to the NW corner of Government House.

Lights are shown from Navy Point and Engineer point. Range lights, in line bearing 185.75°, stand on the S side of the harbor and lead between Navy Point and Engineer Point.

Pilotage.—There is no qualified pilot, but the harbormaster can usually provide a mariner with local knowledge upon request.

Regulations.—Vessels carrying more than 50 tons of explosives, or more than 1 ton of explosives if laden with coal, petroleum, or other inflammable cargo, may not enter Stanley Harbor until such explosives have been discharged.

Vessels are advised to send in their ETA 24 hours in advance. All vessels engaged in transshipment operations in Falkland waters and entering or leaving Berkeley Sound, Port William, or Stanley Harbor are required to report to Stanley Port Control on VHF channel 10 or 16, when passing the Reporting Line.

The Reporting Line joins **Volunteer Point** (51°31'S., 57°44'W.) and **Cape Pembroke** (51°41'S., 57°43'W.). This line forms the outer limit of Berkeley Sound and Port William.

The entry report should state the vessel's name, callsign, type of vessel, international grt, nrt, number of crew, name of local agent, date of entry, time of crossing Reporting Line (in local time), intentions, and locations of intentions.

Vessels entering Stanley Harbor should also report their estimated time at the Narrows.

All vessels at anchor within Falkland waters should maintain a continuous listening watch on VHF channel 16.

A tug will stand by all vessels entering the harbor. Speed is limited to 10 knots within the harbor.

Anchorage.—The harbor, though easy of access and secure, is somewhat restricted for large vessels. However, S of Navy Point, there is good swinging room in depths from 7 to 9m, and it is necessary for long vessels to moor.

Good anchorage may be found NW of the cathedral, subject to strong prevailing W winds, which may make turning difficult when leaving this position. The best time to leave is before 0800 or after 1800, unless there is a widespread area of bad weather over the islands. The W wind, which is local, is seldom strong between these above hours.

The bottom of the harbor is soft mud overlying stiff mud, excellent holding ground. Due to the nature of the bottom vessels may experience some difficulty retrieving the anchor.

The designated anchorages and the several mooring buoys in the harbor may best be seen on the area chart.

Directions.—Vessels bound for Stanley Harbor should proceed through Port William until the harbor range beacons come into line bearing 185.75°. This course maintained will lead 20m W of the middle of the entrance. Navy Point Light is obscured when bearing less than 204°.

A vessel leaving Stanley Harbor should keep the beacon W of Doctor Point bearing 005.75°, ahead, until Yorke Point opens N of Ordnance Point, before altering course E.

10.12 The S coast of East Falkland from Cape Pembroke leads SW for 4.75 miles to Horse Point.

Young Rock (51°42'S., 57°44'W.), with a depth of 5.7m, lies 1.25 miles SW of Cape Pembroke. Wolf Rock, 4.3m high, lies 3 miles SSW of Cape Pembroke.

Dangerous ground on which are some rocks, projects up to 0.5 mile from Wolf Rock.

Maggie Elliot Rock (51°43'S., 58°00'W.), with a depth of less than 2m and which breaks in heavy weather, lies 1.75 miles ENE of Horse Point. A shoal with a depth of 6.4m, lies 0.25 mile WSW of the rock. There is no passage between these dangers and the coast.

Also, kelp projects nearly 1 mile offshore along the middle section of this stretch of coast.

Port Harriet (51°44'S., 57°48'W.) is entered between Horse Point and Seal Point, 1.5 miles SW. Mount William, a prominent peak 244m high, lies about 4.7 miles WNW of Horse Point.

Seal Point, the end of a long thin promontory, is in the shape of a low mound. Foul ground, marked by kelp, extends 1 mile E of Seal Point; on it are some rocks, awash. 5.5m shoal, marked by kelp, lies 0.3 mile NW of Seal Point.

The N shore of the port rises to the range of hills which separates this port from Stanley Harbor. Both shores are swampy. Lake Point, which lies 1.5 miles WNW of Seal Point, has a small detached rock close off its end.

A bar projects across the inlet from Lake Point to the S shore.

There are depths over this bar of 5.5m with a bottom of fine sand in mid-channel, shoaling gradually to depths of 3.7m close to the kelp on either side.

Within the bar depths increase quickly from 7.3 to 12.8m, the bottom changing from sand to mud.

Anchorage.—Vessels may find anchorage, outside the bar in depths of 6.4 to 12.8m. Occasionally, winds between ENE and SE raise a sea at the entrance. Port Harriet affords good anchorage up to a distance of 3 miles W of the bar.

Most dangers are marked by kelp except for a sandbank which projects 183m from the S shore halfway up the inlet.

Vessels anchor in mid-channel in depths of 9.1 to 14.6m, soft black mud.

10.13 Bold Point (51°46'S., 58°04'W.) lies about 8 miles W of Seal Point, and the coast between is bold, rocky, and almost straight.

Halfway between the above points is Beach Point, on whose NE side is a cove with a white beach, open to the E.

A detached 13m shoal, marked by kelp, lies 1.5 miles SSE of Beach Point; a bank, with a least depth of 7.3m, rock, lies 1 mile SSW of the same point. Depths are irregular in the vicinity of both these shoals.

North of Bold Point there is a bay open to E which has a drying rock, surrounded by kelp, near its center. A narrow inlet, on the N side of the bay, leads to the shallow North Basin about 0.75 mile inland.

Port Fitzroy is entered between Bold Point and East Island, 1 mile S. A rocky kelp-covered patch with a least depth of 6.4m lies from 0.75 to 1.5 miles E of the E tip of East Island.

Some dangerous rocks lie about 0.2 mile E of the above mentioned point and 0.3 mile S of the same point is Little East Island.

There is a bar which projects across the inlet from the N shore to the W tip of East Island. The deeper water lies close to the S edge of the kelp patch on the N side of the bar where there are depths of 5.1m. North of the kelp patch is a narrow passage with depths of 4.3m.

10.14 White Point (51°46'S., 58°09'W.) lies about 4 miles W of Bold Point. A sandy spit with depths less than 2m projects 0.25 S from White Point. While this danger is not marked by kelp, it is readily made out as the water over it appears white.

The W end of Port Fitzroy is divided into two arms by **Tussac Island** (51°47'S., 58°12'W.). The S arm forms Shallow Cove which is nearly filled with kelp. The old part of Fitzroy Settlement is situated on the S side of this cove 1 mile WSW of Tussac Island.

On the N side of the inlet, 0.35 mile NW of White Point is the entrance to a narrow channel, 0.5 mile in length, with depths of 2.7 to 3.7m. This channel leads through a remarkable gorge in the ridge of low hills and opens into a shallow basin named Bluff Cove. Fitz Cove, a smaller basin, is entered 0.75 mile further W.

Near Garden Point, which lies about 2 miles W of White Point, and off the point 0.45 mile further W on the opposite shore, there are rocks that dry.

Kelp projects beyond these rocks leaving a fairway 0.2 mile wide with a least depth of 2.8m. On the E side of Rock Point, about 1 mile WNW of Garden Point, there is a narrow passage spanned by Fitzroy Bridge, beyond which navigation is not possible.

North East Point lies 2 miles WSW of Bold Point and between North East Point and South East Point, about 0.6 mile SW, is Loafers Cove. Several islets and rocks lie between the cove and East Island. A narrow winding channel, relatively deep, leads through the above to Port Fitzroy. Within its central section the channel widens to form East Roads, where small vessels, with local knowledge, can anchor.

Tides—Currents.—In Port Fitzroy the tidal currents are scarcely felt. However, in the entrance to East Road it runs about 1.5 knots and rather stronger nearer the head.

Anchorage.—Port Fitzroy provides good anchorage inside the bar in depths of 8 to 12m. Small vessels with local knowledge anchor in a depth of 4.6m, soft mud, 0.2 mile SE of Garden Point.

Directions.—Vessels entering Port Fitzroy from the E should keep a good lookout for kelp and steer to avoid kelp patches between East Island and Beach Point. When abeam of East Island, the vessel should keep towards the N side of the channel passing close S of the large kelp patch NW of the bar.

A vessel approaching from SE or S will see a range of mountains, N of Port Fitzroy, with 3 peaks close together. The middle peak has a broad, flat summit, and the W and highest peak rises to an elevation of 468m.

This peak, bearing 303°, will lead directly to the extremity of the kelp E of East Island, and when clear the vessel should steer W to enter Port Fitzroy as described above.

10.15 Port Pleasant (51°48'N., 58°10'W.), close S of Port Fitzroy, is entered between South East Point and Pleasant Point 2 miles WSW. Lawson Bank, with a depth of 24m, lies 5 miles ESE of Pleasant Point. Snaiths Twins, two above-water rocks, lie 0.75 mile ESE of South East Point and several islets and rocks extend up to 1 mile ESE of the same point.

Poole Rocks, covered by kelp, lie 0.5 mile E of Pleasant Point and kelp extends up to 0.7 mile E of the rocks.

Pleasant Island lies about 1 mile NW of Pleasant Point, and divides the inlet into two channels, each of which is crossed by a bar. Foul ground, covered with kelp, on which there are several islets and rocks, awash, projects 0.5 mile N and 2 miles E of Pleasant Island. Kelp extends 0.75 mile further E.

Depths—Limitations.—The bar in the N channel lies 1.5 miles W of South East Point and has a greatest depth of 5.4m.

The bar in the S channel lies between the E part of Pleasant Island and the S shore, having a greatest depth of 5.1m on the N side of the bar.

Vessels up to 2m draft should have no difficulty crossing either bar, however, vessels of greater draft should not attempt to cross without local knowledge.

The N channel, 0.4 mile W of the bar, is steep-to with a depth of 13.5m, and is narrowed to 91m by an islet. West of the above narrow passage the channel expands to a 0.5 mile width, and continues so until it connects with the S channel off the W tip of Pleasant Island.

Turn Point is located on the S shore of the inlet about 1 mile W of Pleasant Island.

From Turn Point a narrow and tortuous channel, with depths of 5.3 to 7.3m, leads SW for 2.5 miles to a basin called Island Harbor. Island Harbor is shallow except for its E end and almost dries 1 mile from its head.

Tides—Currents.—In both the N and S channels into Port Pleasant currents only attain a rate of 1 knot at springs.

However, in the narrow section of the N passage currents attain a rate of almost 2 knots.

Directions.—The entrance to Port Pleasant and Port Fitzroy are hard to make out from seaward. This is due to the surrounding land being low and indistinguishable until almost up on it. The best guide is the high range of hills N of Port

Fitzroy, with three peaks near together, the middle one showing a broad flat summit.

The W most and highest peak, **Mount Kent** (51°42'S., 58°11'W.), 468m high, bearing 336°, will lead directly to the entrance of Port Pleasant and clear of the large kelp field S of Pleasant Road. The same hill bearing 303° will lead direct to the end of the kelp off East Island.

Anchorage.—Anchorage may be secured by vessels with local knowledge in the N channel of Port Pleasant, in depths of about 10m, between the bar and the narrow passage W.

In addition, vessels with local knowledge can anchor virtually anywhere in this channel N of Pleasant Island and W of the narrow passage in depths of 11 to 18.3m, soft mud.

Pleasant Road (51°50'S., 58°11'W.) is a bay sheltered from S and SE by a bed of kelp, and lies close S of Pleasant Point. Kelp Islands, comprised of 3 islets, and some rocks awash, lie in this kelp. Boat Rock lies near the edge of the kelp about 0.3 mile E of **Boat Point** (51°51'S., 58°13'W.).

Kelp Lagoon, SW of Pleasant Road, is shallow and both of its entrances are blocked by kelp.

Anchorage.—Vessels may secure anchorage exposed to infrequent NE gales in Pleasant Road, 0.7 mile N of Boat Point in a depth of 8m, good holding ground of sand over stiff clay.

It was reported that over a 14 day period, despite continual W winds, a significant swell from between SSE and E predominated in Pleasant Roads.

10.16 Choiseul Sound (51°56'S., 58°31'W.) is entered between **Fox Point** (51°55'S., 58°23'W.) and Dangerous Point, 5.5 miles SSE. This sound leads about 23 miles WNW from its entrance, narrowing gradually towards Darwin Harbor at its head. Most of the known dangers, which are marked by kelp, and the numerous islands and islets can be best seen on the area chart. The islands, creeks, and coves afford good anchorage to small vessels.

Large vessels can generally anchor in any part of Choiseul Sound in depths from 21.9 to 32.9m. The bottom of the sound is mud, covered with shells and weed, which give it the characteristics of a rocky bottom.

Aspect.—The shores of Choiseul Sound are low and interrupted by valleys with small streams in them. From E vessels can identify the sound's entrance by a long white sandy beach projecting NE from Fox Point.

Direction Islet, which lies 2.25 miles NE of Fox Point, is small, dark and conspicuous against the white background.

A prominent radio tower stands 6 miles NNW of Fox Point; a conspicuous hanger stands 0.5 mile further NNW.

The entrance to the sound is divided into two channels by **Middle Island** (51°57'S., 58°28'W.). Kelp projects 2.25 miles E from Middle Island. There are two islets in the W part of the kelp and a large black above-water rock in its E part.

A shoal, with a depth of 11.5m and marked by kelp, lies about 3 miles E of Middle Island.

The main channel into the sound lies N of Middle Island, between that island and Black Rocks, three above-water rocks lying 0.5 mile off the N shore. There are patches of kelp extending 1.75 miles E and 1.5 miles W from these rocks.

The W part of this kelp grows over Choiseul Sound Shoal, with a least depth of 1.3m, lying 1.1 miles W of the W extremity of Black Rocks, and marked by a lighted buoy.

Centre Island, 9m high and conspicuous, is situated 2.75 miles WNW of Middle Island and appears ahead when approaching the sound.

The main channel S of Black Rocks is 1 mile wide; patches of kelp can be seen clearly on its N and S sides.

The passage N of Black Rocks has a least depth of 6.4m but is not recommended except for small vessels with local knowledge. The channel S of Middle Island is full of kelp patches. Green Island lies in this channel about 0.7 mile SW of the W end of Middle Island.

Directions.—Vessels with local knowledge should not experience much trouble navigating Choiseul Sound in daylight. The sound can be approached from E, or through Lively Sound, from S.

From E, after identifying the entrance, vessels should head to pass between the kelp and islets projecting E from Middle Island and Black Rocks to the N, being careful to avoid all patches of kelp.

10.17 White Bluff (51°54'S., 58°44'W.), a bare rock face covered with guano, on a grass-covered bluff, is conspicuous ahead. The channel then passes between two kelp reefs.

The N reef lies 0.5 mile ESE of White Bluff. The S reef lies 0.7 mile E of **Button Island** (51°55'S., 58°44'W.).

A vessel with a draft of 4.3m, reportedly entered Darwin Harbor via the following route.

From a position E of **Scott Island** (51°51'S., 58°56'W.) course was made for the 5m high islet about 0.3 mile SSW of **Squib Point** (51°51'S., 58°55'W.).

When 0.3 mile from this islet, course was altered toward the 15m high islet 0.3 mile NW of Squib Point, keeping to the W side of the channel which is marked by kelp, and passing W of the rock with 5.5m.

Course was then altered N into the harbor, keeping towards the E side of the narrows until course could be altered NW towards Goose Green Jetty, keeping 0.2 mile NE of Seccomb Islands and 0.2 mile S of the small islet situated 0.4 mile NE of the settlement.

Lights on this jetty, when approaching at night, may be misleading, and a searchlight in conjunction with radar is recommended to assist in establishing the vessel's position, especially if the wind is strong.

Darwin Narrows are easily navigated during daylight, but this is not considered advisable at night unless there is a bright moon or much snow is lying. Speed should be reduced when passing through the narrows in either direction with strong favorable winds or tidal currents.

10.18 Mare Harbor (51°53'S., 58°29'W.) is entered between Pandora Point, 2.5 miles W of Fox Point and Johnsons Island (Seal Island), 1.75 miles WNW. The W part of the entrance is obstructed by Sniper Island, 0.3 mile off the SW extremity of Johnsons Island and an area of shoal water ending in Johnsons Island Shoal, 0.6 mile NNE of Sniper Island. Whaler Reef lies in the center of the entrance and shoals extend 0.2 mile N and 0.5 mile WSW.

There is a deep but tortuous channel into Mare Harbor, passing close S and E of Sniper Island, but it is not recommended. The main channel entrance E of Whaler Reef is 0.3 mile wide and clear of danger.

The approach to the harbor either through Choiseul Sound or Lively Sound is clear with the exception of Choiseul Sound Shoal, lying 1.1 miles W of the W extremity of Black Rocks, with a least depth of 1.3m. There is an area of kelp on an 11.2m shoal 0.8 mile WSW of Choiseul Sound Shoal, but this does not present any danger to vessels entering the harbor.

A light is shown at an elevation of 29m from a beacon with a white and fluorescent orange daymark, situated on the East Falkland shore about 0.35 mile N of Arrow Head. The white sector of this light, bearing between 011° and 017°, indicates the buoyed channel. The least depth in the entrance is 11.5m.

The maximum recommended draft for vessels entering Mare Harbor is 10m. Prominent Point and Arrow Head are located 0.5 mile NNW and 0.9 mile N, respectively of Pandora Point.

Boot Head is situated 0.8 mile NW of Arrow Head and forms the NE side of Mare Harbor. A submarine oil pipeline is laid from Boot Head WSW for 0.6 mile and end in a lighted SBM.

Anchoring is prohibited within 300m of the SBM and within 100m of the pipeline.

Anvil Point lies 0.6 mile WNW of Boot Head. A light is shown 0.2 mile NW of Anvil Point. Mare Harbor Shoal, with a depth of 1.8m, lies 0.25 SW of Anvil Point and is marked by a lighted buoy.

An orange spherical buoy is moored 0.2 mile SE of Anvil Point; when a tanker is present in Mare Harbor, a pollution control boom is secured to this buoy.

A prominent tank farm is situated about 1 mile ESE of Boot Head. Lattice masts, each about 35m high, are situated about 0.3mile WSW of Providence Head and 183m W of the root of the terminal jetty in East Cove.

10.19 East Cove (51°54'S., 58°27'W.) is another deep water harbor branching E from Mare Harbor. Hecate Channel, leading from Mare Harbor into East Cove, is entered 1 mile N of Pandora Point. It is 91m wide between buoys marking the edge of shoal water. The least depth is 12.5m.

A vessel with a draft of 9m can safely transit the channel at all states of the tide.

Depths—Limitations.—Army Jetty, T-shaped and with a ro-ro terminal at its W end is situated on the N shore of the cove, about 0.7 mile E of Camp Bay, an indentation at the NW end of East Cove. A dolphin stands off the E end of the jetty; 4 dolphins stand off the W side. A small jetty with a dolphin at each end is situated on the N shore, between Camp Bay and the ro-ro terminal.

Pilotage.—Pilotage for Mare Harbor and East Cove is not compulsory, but is available upon request.

Vessels should report their ETA at Pandora Point to Port Operations, on VHF channel 12, when within range. Port Operations should be informed of any vessel movements within the harbor and ETD.

Anchorage.—Anchorage can be obtained either in Mare Harbor or in East Cove. Vessels should keep clear of the SBM, the pipeline, and the mooring buoys. The bottom is silty mud containing a high amount of peat. The holding ground is poor but is reported to be better in Mare Harbor than in East Cove.

The anchorage in Mare Harbor is exposed to S and SW winds. East Cove affords more shelter and West Cove affords good anchorage to small vessels.

Mackinnon Creek (51°54'S., 58°41'W.), whose entrance lies about 8 miles W of Mare Harbor, affords an anchorage 0.5 mile within the entrance, in depths of 11 to 16.5m.

Bluff Creek lies about 1.5 miles W of Mackinnon Creek. White Bluff, SW of the entrance to Bluff Creek, bare rock face whitened with guano on a grass-covered bluff, is prominent in sunny weather.

Button Island (51°55'S., 58°45'W.), about 0.7 mile S of White Bluff is also prominent. There is a bay on the W side of John Point, 4.5 miles WNW of Mackinnon Creek, that has a rocky bottom and is an unsafe anchorage. A depth of 10m lies in the channel about 1 mile WSW of John Point.

Tides—Currents.—Tidal currents are negligible in Choiseul Sound except in the entrances to the creeks and between the islands.

Off the entrance to Mare Harbor the currents attain a rate of less than 1 knot, while in Hecate Channel a maximum rate of 0.5 knot, in an E to W direction, can be expected.

At the entrance to Choiseul Sound, the general NE flood current runs E, but can barely be felt.

10.20 Darwin Harbor (51°51'S., 58°56'W.) comprises the N part of the head of the sound, and is entered through Darwin Narrows, close W of **Squib Point** (51°51'S., 58°55'W.).

A rock with a depth of 5.5m, lies in mid-channel 183m W of Squib Point. Kelp and rocky ground with depths less than 5.5m extend 0.4 mile S and SE of Squib Point.

Kelp projects about 0.1 mile N of the N side of Hare Island, 0.8 mile NW of Squib Point. A stranded wreck lies on the E shore close N of Squib Point. Goose Green Settlement lies on the W shore of the harbor about 2 miles NW of Squib Point.

The chimney of a canning factory is a very conspicuous mark. About 0.1 mile WNW of the settlement is a T-headed pier with a depth of 2.7m alongside.

Darwin Settlement lies on the W shore of the harbor about 2.2 miles NNW of Squib Point. There is a flagstaff which stands on the summit of a hill close to Darwin.

There is a boat jetty on the S entrance point of a small inlet about 0.1 mile NW of Darwin.

Anchorage.—In Darwin Harbor the best anchorage, for vessels with local knowledge, is about 0.2 mile NNE of Hare Island, in a depth of 7m, stiff mud. A small patch of kelp lies S of a small islet located 0.4 mile NE of Goose Green Settlement. For the most part there appears to be depths of 4.6m up to 183m from the islet.

10.21 Arrow Harbor is situated between the SW shore of Choiseul Sound and Arrow Islands. A rocky shoal, with a least depth of 4.9m, lies in the E entrance to Arrow Harbor.

Vessels with local knowledge can find anchorage in Arrow Harbor in depths of 7.3 to 12.8m mud, avoiding the above rocky shoal which lies in the entrance.

Victoria Harbor (51°55'S., 58°52'W.) can be approached by vessels with local knowledge either E or W of Sea Lion Island. The passage E of the island is preferred by local vessels as the W is narrowed by a kelp reef projecting 0.5 mile ENE of Rock Point.

The entrance of the harbor lies S of **Gull Island** (51°57'S., 58°45'W.) and N of Little Island, the latter surrounded by kelp.

A jetty with a depth of 3m at its head serves Walker Creek Settlement and is located 0.4 mile W of Little Island. There is a conspicuous building near the root of this jetty.

Samuel Islands and Sea Lion Island lie halfway up Choiseul Sound, NE and NW, respectively, of **Low Point** (51°57'S., 58°41'W.).

The passages between Big and Little Samuel Island, and between the Samuel Islands and the mainland are for small vessels with local knowledge.

Anchorage.—Good anchorage for vessels with local knowledge is found in Choiseul Sound E of Sea Lion Island. Anchorage may be obtained by small vessels 0.5 mile E of Low Point in 13m, mud. The area S of Sea Lion Island has good holding ground but is more exposed.

There is an anchorage exposed to W winds in Victoria Harbor, for those vessels with local knowledge, between the entrance and Heifer Point, 2.5 miles WNW, in depths of 9 to 18m. More sheltered anchorage may be found in the approaches to Walker Creek about 2 miles SW of the center of Sea Lion Island, in depths of about 13m.

Directions.—Vessels with local knowledge approaching Victoria Harbor via the channel E of Sea Lion Island should pass 0.35 mile off the prominent NE tip of that island. Then vessels should steer a SW course to clear the kelp reefs on either side. This track passes over a 6.2m shoal. When through the passage, vessels should steer towards Gull Island to clear the kelp which lies off Low Point and off the entrance to False Creek. The buildings of the settlement are conspicuous from the approach.

10.22 Hamond Cove (51°58'S., 58°37'W.) is situated on the S side of the sound, and provides anchorage to small vessels with local knowledge in the entrance.

Lively Island (52°02'S., 58°29'W.), 37m high, located on the S side of the entrance to Choiseul Sound.

Lively Sound separates Lively Island from East Falkland Island, and has a least width of 1.25 miles between Enderby Point and Pyramid Point, about 2 miles WNW.

This sound is entered from S between Reef Point, the S tip of Lively Island, and Motley Island, 6 miles WSW. Reefs project up to 2 miles off Reef Point, and kelp, with an islet in it, projects 0.5 mile SE from Motley Island.

The passage between Motley Island and the shore NW is not navigable. Vessels may find a good temporary anchorage N of Motley Island. A heavy swell rolls into Lively Sound with strong SW or SE winds.

Sal Point, from which a shallow spit extends 1.75 miles W, lies about 3 miles NW of Reef Point. Seal Island lies on the W side of the sound about 3 miles NW of Sal Point.

A reef, marked by kelp, extends 0.5 mile SE of Seal Island and W to the mainland of East Falkland Island. Another reef, marked by kelp, extends W from a position 1 mile S of Seal Island. The channel, between the above reefs off Seal Island and the shallow spit projecting W from Sal Point, is about 1 mile wide. A white house stands on the SW side of Lively Island about 1 mile ENE of Sal Point.

Seal Cove is entered N of Seal Island. The edge of the kelp N of Seal Island is steep-to, and kelp-covered reefs project from it.

Caution.—A restricted area, 4 miles in diameter, containing unexploded ordnance, lies centered 2 miles SE of Reef Point.

10.23 Pyramid Point (52°01'S., 58°35'W.), from which kelp extends 0.7 mile SSW, lies N of Seal Cove. Pyramid Cove is the next cove N of Seal Cove.

Reefs extend S and E of **Knob Point** (51°59'S., 58°36'W.) and off Island Point, 0.5 mile N. A continuous belt of kelp connects these reefs.

Kelp Bay is located off the NW coast of Lively Island, and is entered N of **Kidney Island** (52°00'S., 58°31'W.).

Shallow Harbor, on the N coast of Lively Island, is entered S of Reef Island and **Philimore Island** (51°59'S., 58°28'W.).

There is a settlement with a T-shaped jetty within Shallow Harbor on the N side of Lively Island, 2.5 miles WNW of Sand Hills Point.

Tides—Currents.—During springs, tidal currents reach a rate of 2 knots in both directions in Lively Sound. During strong winds they cause a tide rip off Pyramid Point.

Anchorage.—There is a good anchorage for vessels with local knowledge in Seal Cove, sheltered from all winds, in a depth of 6m, mud and sand. Pyramid Cove affords good anchorage in depths from 9 to 20m, sand over stiff clay.

A vessel of 2,641 tons anchored SE of **Knob Point** (51°59'S., 58°36'W.); this anchorage is recommended for use when the prevailing W winds are blowing.

Also, this same vessel anchored 0.6 mile SSW of **Reef Island** (51°59'S., 58°29'W.), but this anchorage is not recommended when winds are from the W.

Directions.—To make Lively Sound vessels should steer 335° with the W edge of Seal Island ahead. This course will take a vessel into the passage between the reefs off that island and the spit extending off Sal Point.

From this position a course of 010° will take a vessel through the narrows to the main channel of Choiseul Sound NE of **Centre Island** (51°56'S., 58°34'W.), which is 9m high and conspicuous.

A 13.6m shoal is reported to lie about 2 miles NNE of Pyramid Point.

A dangerous rock, in a patch of kelp, lies 0.65 mile W of Centre Island. A depth of 7.9m lies 0.2 mile SE of Centre Island.

10.24 Low Bay (52°06'S., 58°48'W.) is entered W of the Triste Islands, a rocky group 1.5 miles W of Motley Island.

Although the shores of Low Bay are indented by several coves, this bay doesn't afford good anchorage as the ground is rocky and foul in places and a heavy swell rolls in with S gales. There are tidal currents of 1 knot at the entrance to Low Bay. The least reported depth in the entrance to the bay is 23.7m.

The most conspicuous landmark in Low Bay is **Bluff Head** (52°05'S., 58°51'W.), 18m high, a dark bluff cliff. There is a small islet close off Bluff Head.

The only known dangers in Low Bay are some kelp-fringed rocks that dry, lying halfway between Turn Islet and Bluff Head, 3 miles NE.

Shag Rock (52°13'S., 58°39'W.) lies about 5 miles off the entrance to Low Bay. This rock is an excellent unique mark for those vessels bound for Lively Sound or Adventure Sound from the S. The low land of East Falkland Island is so uniform

that it is almost impossible for one unfamiliar with the area to positively recognize his landfall, particularly as the high range of hills is seldom visible from so far S.

Sea Lion Islands or Shag Rock, once distinguished, will greatly assist the navigator. Several below-water rocks lie up to 0.75 mile NE and 2 miles SW of Shag Rock.

A shoal with depths of 14.5 and 13.1m were reported to lie 1.5 miles W and 1.75 miles NNE of Shag Rock. It was also reported that there was less water than charted lying to the W of the rocks. There may be several ridges running off Shag Rock; vessels should give this area wide berth.

Bleaker Island (52°13'S., 58°53'W.) is a long, low, narrow island, at the entrance to Adventure Sound. The passage between its SW end, Cassard Point, and Driftwood Point, 1 mile SW, is obstructed by a rocky reef named Bleaker Jump.

The land in this vicinity is featureless, making identification difficult. The channel, with depths from 4.8 to 6.5m is navigable by small vessels with local knowledge.

Kelp projects across the width of the passage. Its effect on vessels is lessened at high tide.

Vessels should stay in the middle of the channel through the narrows. There is a 4.8m shoal, unmarked by kelp, 2.5 miles NE of Cassard Point.

10.25 Sandy Bay Island (52°11'S., 58°48'W.) is located off the E coast of Bleaker Island. A reef extends off the SE tip of Bleaker Island to a position 1.5 miles S of Sandy Bay Island.

A rock, whose existence is doubtful, was reported to lie 1.5 miles SE of Sandy Bay Island.

Anchorage.—Sheltered anchorage, from most winds can be found in a bay on the E side of Bleaker Island, 1 mile NW of Sandy Bay Island, in a depth of 21.9m.

Adventure Sound is entered from Low Bay between Turn Islet and the N tip of Bleaker Island.

This sound has within its confines several fine harbors, the main one being Adventure Harbor, and the other, Moffit Bay.

Both harbors lie in the S part of the sound. Situated on the SW side of the sound are the harbors of Barrow, Fox, and Sullivan.

North Point Island lies 0.5 mile W of the N tip of Bleaker Island, and between them is a passage with depths of 9 to 11m, suitable only for small vessels. Halt Island is situated about 3 miles S of North Point Island. A kelp spit projects 1 mile N of Halt Island.

Small vessels with local knowledge can find anchorage in a bay E of Halt Island in a depth of 11 to 12.8m. Bleaker Settlement Jetty is situated 1.25 miles SE of Halt Island.

Moffit Bay lies in the S corner of Adventure Sound, and it is not easy of access, but provides anchorage in depths of 12.8 to 18.3m.

Moffit Bay is entered SE of The Sisters, a chain of rocks which lie NE of the entrance of the bay.

Adventure Harbor lies about 4.2 miles N of Driftwood Point. This harbor, which is spacious and easy of access, can accommodate vessels of virtually any size.

In Adventure Sound currents are negligible, except in West Arm at the head of the sound, where the ebb current is strong.

Anchorage may be taken in Adventure Harbor in depths of 9 to 21.9m, stiff mud. Barrow Harbor, separated from Adventure Harbor by a promontory, is entered N of **Large Island**

(52°08'S., 59°00'W.). Little Island, a small dark mound of tussac grass, lies 0.5 mile off Large Island's E side.

A steep-to kelp patch lies 1.25 miles SSE of Little Island. Kelp Islet, whose N side is steep-to lies 1 mile W of the N tip of Large Island. Barrow Harbor affords anchorage in depths of 7.3 to 18.3m, good holding ground.

Fox Harbor, entered S of **Low Point** (52°05'S., 59°05'W.), provides a good harbor for small craft. Great Island lies about 0.4 mile E of Low Point, and the passage between has a depth of 5.5m, but can only be used by small craft. A rocky spit, which partly dries, projects 0.5 mile N, with depths of 7.3m close to the kelp. A patch of kelp with depths of less than 2m at its E end lies 0.5 mile SE of Great Island.

Button Island, which is small and round, lies 0.5 mile E of Great Island. A patch of kelp, marking a rock, depth of less than 2m, lies halfway between Button Island and Shell Island.

Sullivan Harbor, entered N of a promontory about 3 miles N of Low Point, is kelp-fringed and accessible only by small vessels.

Anchorage in good holding ground, mud and peat, may be obtained 1.5 miles E of Button Island, in a depth of about 22m.

Sheltered anchorage may be obtained 0.7 mile NE of **Burnt Island** (52°02'S., 59°11'W.), stiff mud, good holding ground.

10.26 Sea Lion Islands (52°25'S., 59°00'W.), a group of one large and three small islets, lie about 11 miles S of Bleaker Island. The large island lies 18 miles SW of Shag Rock.

A reef with the 3 small islets, and several below-water rocks, projects 2 to 6 miles E from the E tip of the large island.

A detached reef lies 2.5 miles further ENE. The channel between the E tip of the large island and Brandy Island, the W most islet on the reef, has a least reported depth of 7.8m.

However, a reef on which the sea breaks projects 3 miles S from the large island, and vessels from S intending to use this channel should keep a good lookout. It was reported that this reef extended further S than charted. A wool shed stands on the N side of the large island and a house near its E end. A shoal, with a depth of 18m, lies 9.5 miles WSW of the island.

A shoal 34m was reported to lie 1.5 miles NW of the W end of Sea Lion Islands. Lesser depths possibly exist between it and the islands. A bank, marked by kelp and with a least depth of 17.9m, lies about 10 miles WSW of the W end of the largest of the Sea Lion Islands.

Beauchene Island (52°55'S., 59°12'W.) lies about 27 miles S of Sea Lion Islands. The N point rises to a green mound 82.6m high, and the S end, which is less than half that height, is rocky. The S and E sides form high cliffs, and the W side slopes down to the sea. There are no known dangers beyond 0.25 mile offshore.

It was reported that a shoal or below-water rock was believed to exist about 4 miles WNW of Whirlwind Point the N point of Beauchene Island.

Mintay Rock was reported to lie 3.5 miles SW of Beauchene Island. However, while the existence of this sunken rock is doubtful, vessels should exercise caution when passing S of Beauchene Island.

10.27 Bay of Harbors (52°17'S., 59°11'W.) is entered between Driftwood Point and Porpoise Point, about 12 miles

WSW. This bay, which is much indented by coves and inlets, has upon its shores hills which rarely exceed 55m in height, and that present a regular appearance from the offing.

Rocks, which are below-water, project 1 mile off Driftwood Point. A shoal, with a depth of 23m, lies about 2.2 miles SW.

Cassies Island and Driftwood Island lie, respectively, close S and 0.6 mile SE of Driftwood Point.

Porpoise Point (52°21'S., 59°18'W.), the SW entrance point of Bay of Harbors, has two kelp patches 1.5 miles SE, and kelp, in which there are some rocks awash, 0.5 mile SE.

Bull Point lies 1.25 miles NE of Porpoise Point. A depth of 20m lies 1.5 miles WNW of Bull Point. A depth of 19m lies 0.75 mile NE of Bull Point.

The point is reported to be marked by a light from which a racon transmits.

Tides—Currents.—The flood current runs W along the S coast of East Falkland Island at a rate of 1 to 2 knots. Off Porpoise Point the current attains a rate of almost 3 knots and forms a strong race during W gales.

Bull Road lies in the SW part of Bay of Harbors, and is entered between Bull Point and Bull Islet, 3 miles NW. This road is the most convenient anchorage in the S part of East Falkland Island. Bull Cove is entered 1 mile WSW of Bull Point.

Anchorage.—Vessels with local knowledge can anchor in 12.8 to 18.3m, good bottom, 0.5 mile NNW of the entrance to Bull Cove. The large kelp reefs, NW of Bull Point, provide good shelter from E winds.

Middle Shoal has a depth of 11.2m and lies 3.5 miles NE of Bull Point. A rock, awash, whose existence is doubtful, lies 0.3 mile NE of the shoal.

Fanny Islands and Harbor Islands, 0.5 mile E, lie in a bank of kelp on the W side of the bay, 4.5 miles N of Bull Point.

Little Harbor Island lies on a bank of kelp 1 mile E of the S harbor island. A detached patch of kelp, marking a rock with a depth of less than 2m, lies 0.6 mile NE of the N Fanny Island.

Fanny Road is entered N of Fanny Islands, between them and West Point (Devil's Point), 1.5 miles NW. Vessels with local knowledge can find secure anchorage, in Fanny Road, in depths of 9.1 to 29.3m, sand and mud. Snug Cove is entered 3.5 miles NW of West Point.

There is a good anchorage, as charted, W of the three kelp patches and S of the cliffy point forming Snug Cove, in 14.6 to 27.4m, sand and mud.

North and Northwest Arms provide secure anchorage to vessels of moderate tonnage in the inlets at the head of the bay. There is a large settlement at the head of the E creek of North Arm. This settlement is not visible from a distance until North Arm is entered.

There is a pier with a depth of 2.3m alongside but the passage to it is narrow, and requires local knowledge. Garden Point, the point separating the W and E inlets of North Arm, has a sheep corral which can be identified. Round Islets lie about 4 miles NW of West Point.

A vessel of 2,641 grt obtained good anchorage with excellent holding ground in a depth of 8.2m, sand and mud, 1.5 miles NNE of the Round Islets. However, the anchorage is restricted and streamers of kelp were observed.

Anchorage has also been obtained 0.5 mile SE of Garden Point, in 18m, soft gray mud, good holding ground.

Eagle Passage is situated between the SW end of East Falkland Island and the islands Barren, George and Speedwell.

This passage is entered between a point about 3 miles WSW of Porpoise Point and the S tip of Barren Island, 11.5 miles W.

Also, the passage extends 18 miles NNW and has a least width of 1 mile in the N section, E of Speedwell Island.

10.28 Barren Island (52°22'S., 59°41'W.), from which foul ground is reported to extend up to 5 miles E and 4 miles SE from the S tip, forms the SW side of Eagle Passage.

Two parallel reefs project 2 miles NE from the NE coast of Barren Island. These reefs were reported to extend further NE than charted. Below-water rocks surrounded by kelp are situated 2 miles N of Tea Point, the N tip of Barren Island.

Owen Road is located between the NW side of Barren Island and the E side of George Island. The passage at the head of Owen Road between George and Barren islands is reported to be foul, and only 0.3 mile wide.

Winds—Weather.—During SW gales the water is quite smooth in Owen Road. During SE gales, which cause the heaviest seas on the coast, smooth water will be found when the N tip of Barren Island bears less than 100°.

Anchorage.—Vessels with local knowledge can find anchorage in Owen Road. A good berth lies close off George Island, 3.5 miles NNW of the S tip of Barren Island in depths from 14.6 to 18.3m, stiff clay, covered with broken shell.

Vessels will see stems of kelp which are reported to be of no consequence. A 5.6m shoal was reported to lie about 1.7 miles WNW of Tea Point.

There is a below-water reef to be avoided when utilizing this anchorage. This reef projects nearly 1.5 miles ENE into the middle of the road from the S part of the E side of George Island. There is a house and a jetty at the head of a small bay on the E side of George Island, and a house on the N side of the SW part of Barren Island.

Directions.—Vessels entering Eagle Pass from SE should avoid the foul ground that projects about 4 to 5 miles SE and E from Barren Island, and Barren Reefs, that extend 2 miles or more NE from the N E tip of Barren Island.

Those vessels intending to change course for anchorage in Owen Road should not do so until the passage between Barren and George Islands is open, or until in a position from which the N tip of Barren Island bears 225°, and the NE tip of George Island bears 293°. Vessels can then alter course to 245° which will lead to the anchorage.

The passage which is recommended lies N of the N end of Barren Reefs and S of the below-water rocks lying 2 miles N of Tea Point, and the dangers off the SE side of George Islet; it is 1 mile wide and clear of dangers.

If bound for Owen Road from N vessels should steer to pass 0.5 mile E of the NE tip of George Island. Then course should be shaped to pass midway between the two islets 1.25 miles S of the NE tip of George Islands and the below-water rocks 1 mile E, then to the anchorage.

10.29 Speedwell Island (52°11'S., 59°42'W.) represents the largest of the three islands on the W side of Eagle Passage. Speedwell Passage lies between George and Speedwell Islands and should not be attempted without local knowledge as there are strong tidal currents within, and lack of soundings to the W.

Annie Island lies 2 miles N of George Island, and is fringed with kelp and reefs up to 0.25 mile offshore.

A reef of below-water rocks extends from the W end of Annie Island 1 mile NW to the shore of George Island.

Anchorage.—Speedwell Island has two good anchorages for those small vessels with local knowledge on its NE side. Halfway Cove is entered N of the E tip of Speedwell Island.

This cove offers a restricted anchorage in depths of 9 to 14.6m, good holding ground, N of the S entrance point.

The other anchorage is about 2 miles SE of **Phillips Point** (52°07'S., 59°46'W.), the NW tip of Speedwell Island. This anchorage, in the first sandy bay when standing along the island to the S, should be approached with care as shoal water projects 0.75 mile from the NE part of Speedwell Island.

Stinker Island, a small kelp-fringed islet, lies 1 mile NW of Phillips Point.

Elephant Cays, lying off the NW end of Speedwell Island, are low sandy islets surrounded by reefs and kelp. Shoals project 3.25 miles NNW from the N end of these islets.

Golden Knob is a conspicuous cone-shaped islet 23m high, situated in the center of Elephant Cays, 2 miles WSW of Phillips Point. There is a passage about 0.5 mile wide between Elephant Cays and Speedwell Island. This channel is relatively free of dangers except for a 9.1m patch 0.5 mile S of the Cays.

Depths of 11 to 12.8m have been reported 2 miles NW of Elephant Cays; a 15m shoal patch lies 2.75 miles NW and a rock, marked by a patch of kelp, on which the sea occasionally breaks, lies 1 mile SW of the Cays, and give a wide berth.

Heavy breakers were reported in the area between 0.5 mile and 1 mile W of the Cays. Kelp was reported to extend 2 miles NW of the Cays.

Caution.—The area N of Elephant Cays has not been adequately surveyed, and depths less than charted may exist and vessels should therefore keep to the deep channel.

10.30 Blind Island (52°16'S., 59°33'W.) lies on the E side of Eagle Passage about 5 miles ENE of the NE tip of George Island. Detached shoal patches, marked by kelp, of which the shallowest has a depth of 12.8m, lie 1.75 miles W of the N tip of Blind Island.

Mid Island, 15m high, lies 3 miles NW of Blind Island. A reef, which dries, projects 0.25 mile NW of Mid Island. Ladrillo Island lies 2 miles N of Mid Island. A conspicuous wreck lies inshore of Ladrillo Island. A detached rock, with a depth of 6m, lies 0.5 miles N of Phillips Point.

A reef, which is marked by kelp, is situated 1 mile W of the W extremity of Ruggles Island and extends to within 0.5 mile of the detached 6m rock. Depths of less than 6m may exist in this area.

Tides—Currents.—Tidal currents within Eagle Passage, influenced by the winds, attain rates of 2 to 3 knots. The flood current runs N, the ebb S.

Directions.—Vessels with local knowledge proceeding through Eagle Passage should pass W of the 12.8m patch 1.75 miles W of Blind Island and W of Mid Island. The channel N of Mid Island is narrow but clear of dangers.

Vessels entering Eagle Passage from N, with local knowledge, should remain at least 2 miles NE of Elephant Cays and well clear of the kelp off Stinker Island.

Caution is required to avoid the detached rock 3.5 miles N of Phillips Point, and also the reef which projects 2.5 miles WNW from the S end of Ruggles Island.

The areas W of George and Speedwell Islands have not been adequately surveyed and vessels should exercise extreme caution when navigating in these waters.

Falkland Sound

10.31 Falkland Sound divides East Falkland Island from West Falkland Island, and is about 50 miles long. Directions for passage through the Falkland Sound are given at the conclusion of the narrative in paragraph 10.39.

Tides—Currents.—Off Race Point, the tidal currents attain a rate of 4 knots. In Grantham Sound it diminishes to 1.5 knots. In both entrances to the sound and between the islands, the tidal currents attain rates of 3 to 5 knots at springs. In the wider parts, they are moderate.

Among the islands in the SE part of the sound the currents are very irregular in direction and rate.

The flood currents enter both entrances to the sound and meet near the N end of **Swan Island** (51°44'S., 59°28'W.).

They appear to turn at about half tide, but they have not been fully investigated. In the N entrance the flood current going in begins 3 hours before HW by the shore.

Aspect.—At the S end of the sound there are many flat islands and some shoals.

The dangers, as far as is known, are generally visible. Due to the smooth nature of the water and the rarity of thick weather, navigation of the sound is normally easy by day. However, it is not considered prudent to navigate the sound at night unless equipped with good radar.

To vessels entering from N, the E side of the sound, S of Northwest Islets and Grantham Sound, changes its aspect and is low, with gentle undulating hills that seldom exceed 46m in height, maintaining this character to the S end of the sound.

This E shore is pocked with good harbors, offering good shelter.

The W side of the sound is high, bold and formed by a singular ridge, 90 to 180m high, running almost the length of the sound. There are several breaks in this ridge where harbors are formed. The gaps or fissures in the S part of the sound are excellent guides to the harbors and islands on the opposite side. Immediately behind the above mentioned ridge are Hornby Mountains. This group, 549 to 610m high, project in a parallel line as far as Hill Gap, where they head W.

Mount Maria, the highest summit near the sound, rises to a height of 669m, 5 miles WNW of Bold Point.

10.32 Foul Bay, which forms the E side of N Falkland Sound, is entered between Cape Dolphin, previously described in paragraph 10.3, and Middle Point, about 9 miles S. This bay is reported to be encumbered by many rocks and shoals.

Elephant Beach forms the head of Foul Bay, and is reportedly fronted by foul ground 2 miles off and extending.

The N shore of Foul Bay rises gradually to cliffs, attaining an elevation of 38m. A stone cairn, with a height of 36m lies 4 miles SSE of Cape Dolphin. The S shore of the bay is distinguished by rugged cliffs, about 48m high, broken only by the mouths of two streams.

Middle Bay is entered between Middle Point and **Race Point** (51°25'S., 59°06'W.), 4 miles WSW.

The shores of this bay are cliffy and kelp fringes the SW shore. Smylie Creek, used only by small craft, is entered close S of a sharp bluff 2.25 miles SSW of Middle Point. There are three prominent hills on the S side of Smylie Creek, named Rincon de los Tres Picos. These hills range in height from 158 to 168m.

Vessels without local knowledge should not navigate within lines joining the entrance points of Foul and Middle Bays.

Rocks, and patches of shoal water are known to exist in Foul Bay and may exist in Middle Bay although the latter bay appears to be free of dangers.

Race Point, the NE entrance point of Falkland Sound, consists of steep cliffs that rise abruptly from the water to heights of 46m.

Sunk Rock, over which the depth is not known, lies near mid-channel between White Point Rock and Race Point. The kelp which marks this danger is only visible at slack water. Tide Rock, 2 miles WSW of Race Point, is 1.5m high; a rock, awash, lies close S. Tide Rock is nearly always awash at HW.

This rock is almost steep-to and is a useful mark for the middle of the channel; vessels usually pass E of it, and it is safe to do so within 183m of the kelp, which is visible at all times.

The kelp-fringed coast 3.5 miles SSW, from Race Point to Fanning Head, is notable for its sheer cliffs which rise to a height of 107m. These cliffs are broken midway by a wide sandy beach.

Fanning Head has two summits and is prominent and high. The NE, and higher, summit rises to a height of 234m 0.5 mile inland, and has a conspicuous cairn on its top.

Fanning Harbor lies on the N side of Fanning Island, 2 miles SE of Fanning Head. Good anchorage, for vessels with local knowledge, may be found in depths of 12.8 to 25.6m, mud.

Foul ground projects about 183m W from the W end of Fanning Island. The E end of the island is joined to the mainland by a rocky bank that dries.

Port San Carlos and San Carlos Water are both approached between Fanning Head and Chanco Point, about 2 miles SSE.

10.33 Port San Carlos (51°30'S., 59°00'W.) is large, secure, and mostly free of dangers. Careening Cove lies on the N side of the head of Port San Carlos. There is a T-head jetty at Port San Carlos. It is 9m long and can handle a vessel with a length of 51m and a draft of 3.5m.

Anchorage.—Small vessels with local knowledge might find anchorage off the jetty at Careening Cove, in depths of 21.9 to 27.4m, the shores at the head of the inlet being steep-to. However, due to a sand and rock bottom, a depth of 25m, and poor holding ground, vessels should only use it as a temporary anchorage.

Directions.—Vessels entering the inner section of Port San Carlos should heed the limited maneuvering space and the speed at which the weather deteriorates.

San Carlos Water is reported to project about 7 miles SE from **Chanco Point** (51°30'S., 59°08'W.). At the head of the inlet are two shallow creeks between which stands a large prominent white house. In the main part of the inlet there are no known dangers within 0.2 mile offshore. However, within 1 mile of the head of the inlet the depths are less than 5.5m.

A kelp-fringed rock, which dries 1.5m, lies about 0.2 mile from the W shore, 1 mile from the head of the inlet.

A wreck, with 7.6m, and marked by a buoy close N, lies in the middle of San Carlos Water, about 0.4 mile E of **Red Point** (51°33'S., 59°04'W.).

Ajax Bay lies on the W side of the inlet 4.5 miles SSE of Chanco Point. There is a settlement and a disused refrigeration plant at Ajax Bay. Bonners Bay, with depths less than 5.5m, lies on the E shore about 2 miles SE of Ajax Bay.

There is a pier, which dries at LW, at Bonners Bay, that is used by small craft.

Anchorage.—Vessels with local knowledge can obtain anchorage in San Carlos Water in depths of 7.3 to 25.6m.

Cat Island lies 2.5 miles SSW of Chanco Point. This island lies in a large area of kelp that has not been closely examined, and should be given a wide berth. Northwest Islets, which are connected to East Falkland Island by foul ground, lie 5.5 miles SSW of Chanco Point.

A wreck with a depth of 18m lies 0.6 mile SW of Northwest Islets.

Rookery Island (51°37'S., 59°08'W.) lies about 0.7 mile off the N shore of Grantham Sound and is encompassed by rocks.

A chain of rocks extends E to the coast from a position 1.25 miles S of Rookery Island.

Port Sussex, entered on the NE side of Grantham Sound, provides a good harbor for small vessels. There is a small kelp patch with a depth of 5.2m that lies near the middle of the entrance. There is a prominent house which is located on the N shore of the inlet 1.5 miles E of the entrance.

Vessels with local knowledge can find anchorage beyond a flat stony point on the S side of the inlet 1.5 miles inside the entrance, in depths of 7.3 to 9.1m, stiff mud.

Brenton Loch is entered about 2 miles to the S of Port Sussex. However, due to a narrow entrance and strong tidal currents its use is reported to be restricted to small craft with local knowledge.

New Haven lies on the S side of Grantham Sound 7 miles S of Northwest Islands. This small port affords good anchorage, although open NW, little sea sets in.

Small vessels with local knowledge can find anchorage towards the W side of New Haven Inlet, 1 mile from the entrance, in depths from 7.3 to 11m, stiff clay under a layer of sand. There is a group of below-water rocks that lies 2.5 miles WSW of the entrance to New Haven Inlet.

A depth of 14.4m lies 4.25 miles WNW of the W entrance point of New Haven Inlet. Kelp Harbor is situated 5 miles SW of New Haven Inlet.

10.34 Egg Harbor (51°50'S., 59°23'W.), about 15 miles SW of Northwest Islets, is entered between Long Point and John Strong Island, which is covered with tussock grass and about 3 miles NNE.

Garden Point is situated 1.5 miles SSE of Long Point. Parker Shoal, with a depth of 4.8m, lies 1.25 miles N, and a below-water rock lies about 0.6 mile ENE of Long Point.

Parker Shoal is not marked well by kelp and is only visible in calm conditions.

A dilapidated jetty, awash at HWS, with depth of 2m at its head, is located on the SW side of a creek at the head of the harbor. A range, marked by cairns, in line bearing 187.5°, may

be used to enter the harbor; it was reported that these cairns were difficult to see.

High Cliff Island (51°48'S., 59°28'W.) is the highest island in the sound, rising to a height of 30m. This island is conspicuous for a prominent white cliff discolored by birds.

High Cliff Island is connected to the shore to the S by foul ground. High Cliff Island East lies 0.75 mile S of High Cliff Island; High Cliff Island West lies 1.5 miles SW of the same island.

Main Passage lies W of High Cliff Island West, and between it and the SE tip of Swan Island the passage is 2 miles wide, deep, and clear of dangers.

However, a 15m patch, located 2 to 3 miles NNE of the SE end of Swan Island, has not been adequately examined and depths less than charted may exist.

Tyssen Islands lie about 7 miles SW of High Cliff Island. A rock, existence doubtful, with a depth of less than 2m, lies 0.5 mile N of North Tyssen and a ridge, terminating in a shoal of 12m extends 1.25 miles NNE of the charted position of the rock.

Another ridge, which has not been closely examined, but with charted depths between 13 and 20m, lies parallel with, and about 2 miles NW of Tyssen Islands.

Depths less than charted may exist on this ridge. Tyssen Patch is a rocky, kelp-fringed shoal that lies 1 mile WNW of the S tip of the SW Tyssen Island. A kelp-marked shoal with a least depth of 5.5m lies in the fairway 1.5 miles NW of Tyssen Patch. Sandbar Island is connected to the SW Tyssen Island by foul ground, on which are some islets and rocks.

Cygnat Harbor is entered 4.75 miles SSW of High Cliff Island. Though encumbered by several kelp patches, this harbor offers good shelter for small vessels.

Port King, Wharton Harbor, and Findlay Harbor, entered 3.5 miles ENE, 1.5 miles SSE, and 3 miles SSW, respectively, of Sandbar Island, all afford good secure anchorages and are almost clear of dangers.

An obstruction, with a depth of 8m, and a wreck close SE of it, lies in the entrance to Port King.

Great Island lies about 1.2 miles WSW of Sandbar Island. In the channel between Great Island and the SW entrance point to Findlay Harbor is an islet joined to the point by foul ground.

Tickle Pass, with a least known depth of 10.3m, is the channel between the islet and Great Island.

This passage can only be used by small vessels with local knowledge as it is narrow and subject to strong current. A shoal, marked by kelp, with a depth of 9.4m, lies 2.75 miles WSW of the N tip of Great Island. Off the NW side of Great Island, depths less than charted may exist.

Vessels with local knowledge may obtain good anchorage in Anchorage Bay. This cove lies on the E side of Great Island and has depths of 21.9 to 27.4m.

Directions.—The passage E of the Tyssen Islands, which leads to Port King, Wharton and Findlay Harbors, is mostly free of dangers except for a 12.8m shoal 0.5 mile SE of the N Tyssen Island. The kelp on the reef projecting 0.4 mile S of Sandbar Island is frequently run under by tidal currents.

10.35 Ruggles Island (52°03'S., 59°42'W.) fronts the SW part of Ruggles Bay. Clump Islet and Wolf Island lie, respectively, 1.75 miles NE and 1.5 miles NW of the N tip of

Ruggles Island. Rocks, awash, and patches of kelp, lie halfway between Clump Islet and Great Island, 2.5 miles NE. A rock with a depth of 1.8m lies 0.5 mile ESE of the N tip Ruggles Island.

A patch of rocks with depths less than 2m lies 1.25 miles WSW of the same point. Rocks project 1.25 miles WNW and a detached rock, with a depth of 2m lies 1.75 miles W of the SW end of Ruggles Island.

Ruggles Bay lies E of Ruggles Island and is entered between that island and Wolf Island, 1 mile NE. Moffitt Harbor and Danson Harbor are coves at the head of the bay. Robinson's Patch, a shoal with a depth of 7.7m, lies about, 183m NW of the peninsula separating the two harbors.

Anchorage.—Vessels with local knowledge may find good anchorage in Ruggles Bay. The best berth can be found in the SE corner of the bay as the bottom is hard near the entrance.

Calista Island (52°01'S., 59°50'W.) lies in the S entrance to Falkland Sound. Wedge Islet and other islets, rocks and kelp patches form an archipelago stretching 4 miles NE, to within 1 mile of Great Island.

A shoal with a least known depth of 8.2m lies 2 miles S of Calista Island. Depths less than charted may exist on the shoal.

10.36 White Rock Point (51°24'S., 59°10'W.), 34m high, comprises the NW entrance point to Falkland Sound. White Rock, conspicuous, haystack-shaped and whitened by lichen, lies at the end of a rocky ledge that projects some 0.2 mile NE from White Rock Point and rises to a height of about 26m.

Rocks, awash and marked by kelp, lie 0.75 mile ENE of White Rock. The kelp on these rocks is only visible at slack water. The passage between these rocks and White Rock has a least depth of 12.8m. However, the passage can only be used in good weather by vessels with local knowledge.

White Rock Bay is entered between White Rock Point and Jersey Point, 2 miles S. Jersey Point is long, thin, and steep-to, and rises from a height of 39.6m at its seaward tip to 120m near the head of the bay. Jersey Harbor is formed by two coves in the S part of the head of the bay.

Small vessels with local knowledge awaiting fair weather or tide can find anchorage in White Rock Bay sheltered from W and SW winds. Although the head of the bay has not been surveyed, it is known to provide good shelter. Most of the dangers are marked by kelp.

The kelp-fringed coast between Jersey Point and Many-Branch Harbor, about 8 miles SW, is mostly steep-to and consists of cliffs 30 to 60m high. Mount Rosalie, 425m high and prominent, lies about 3 miles N of the Many-Branch Harbor entrance.

Many-Branch Harbor lies between two cliffy headlands, and is a good harbor whose entrance is tortuous and narrow. The harbor should not be entered without local knowledge as it has not been examined. Bold Cove, 7.5 miles SW of Many-Branch Harbor, offers good anchorage in 14.6 to 15.8m mud.

10.37 Port Howard (51°39'S., 59°32'W.) lies 11 miles SW of Many-Branch Harbor and is narrow, but very secure. West winds are often stronger in Port Howard than in the sound outside, with squalls that are violent off its W shore.

Winds, locally named "Woollies" are funneled by the surrounding hills. The N part of the inlet is covered by kelp-

streamers which may block condenser inlets. Kelp marks the shoal water on either side.

A settlement lies on the W side of the head of a creek located at the N part of Port Howard, 2 miles NNE of the entrance. Situated on the W side of the creek is a T-headed pier, 9m long with depths of 3m alongside its head, utilized by vessels up to 30m long.

Anchorage.—Good anchorage, for vessels with local knowledge, may be found just inside the heads in depths of 7 to 8.9m, with soft mud. Moreover, anchorage further N is not recommended as the swinging room is restricted and there are many patches of kelp.

There is additional anchorage available in a small cove outside Port Howard, 0.8 mile S of the entrance.

10.38 Shag Harbor (51°44'S., 59°35'W.) lies 6 miles SW of Port Howard and is suitable only for small craft. A kelp-covered reef extends 0.3 mile NE from the S entrance point; depths up to 18m exist in the harbor.

Holding ground is excellent but anchoring is not recommended as W winds cause violent qualls to blow down the ravine.

There is a good anchorage off the entrance to Snug Harbor taking care to avoid a line of below-water rocks and shoals extending NE from West Swan Island and lying, about 0.7 mile off the entrance. This danger may reach as far NE as the reefs S of Port Howard.

Swan Islands are comprised of North Swan, Swan, and West Swan Islands which all lie off the entrance to Snug Harbor.

For the most part the islands are low, flat and grass-covered; their coasts are formed by cliff up to 10m high.

Patches, with depths of 13 and 16.7m, lie 5.5 and 3.75 miles NE of North Swan Island. A wreck, with a depth of 14.8m, lies 0.9 mile E of the extremity of the same island. A kelp covered shoal, with a depth of 8.7m, lies 0.5 mile N of the N extremity of the same island. A shoal, with a least known depth of 11.8m, lies 1 mile E of Swan Island.

North Swan is connected to Swan by a rocky bank through which there is no passage. A 13m patch lies 5.25 miles NE of North Swan. Swan Passage, between Swan Island and West Swan Island, is narrowed by a reef extending from both islands and has not been fully surveyed.

The least known depth in the center of the channel is 8m, but a reef, with a least depth of 1.9m at its outer end, extends about 0.3 mile W from the W extremity of Swan Island. Kelp marks the edges of the channel. Swan Passage should be used only by small vessels with local knowledge.

The narrow channel W of West Swan Island is not recommended as it is blocked at its SW end by shoals. An anchorage, which is not recommended during N and W winds, for vessels with local knowledge, lies 0.5 mile N of a foul cove on the N side of North Swan, in a depth of 14m.

The headland which forms the E side of this foul cove may be identified by a prominent house and shearing shed with a boat jetty.

Caution.—Tidal currents attain rates of 2.5 knots between Swan Island and North Swan Island, and 3 knots in Swan Passage. A large standing wave forms at the S end of Swan Passage during S gales.

10.39 Oberon Patch (51°49'S., 59°41'W.), which is marked by kelp and almost dries, lies 2 miles SW of the S tip of West Swan Island. This patch has depths of 10m close around it. An 8m shoal, marked by kelp, lies 1.5 miles ESE of the center of Oberon Patch.

Depths less than charted may exist SW, NE, and E of Oberon Patch, off the N entrance to Hill Gap Cove. A rock, awash at HW, lies 0.75 mile WNW of Oberon Patch.

Hill Gap Cove (51°48'S., 59°44'W.), which is entered about 4 miles WSW of the W tip of Swan Island, affords anchorage for small vessels with local knowledge in general depths of 11m. Hill Gap Islands, lying 0.5 mile offshore, project 5 miles SW of Hill Gap Cove. Passage between these islands and West Falkland Island is not recommended.

West Island (51°58'S., 59°49'W.) is small and surrounded by rocks. The channel between West Island and the point 1 mile NW, though deep, is narrowed by a rocky shoal with rocks, the largest of which dries 1.5m, projecting from the point.

East Head lies 6.5 miles WSW of West Islet, and represents the NW entrance point of the S entrance to Falkland Sound.

Directions.—Deep draft vessels intending to transit Falkland Sound are advised to do so by daylight only. Vessels should endeavor to identify Eddystone Rock and Cape Dolphin prior approaching the N entrance.

On the E and W sides of the N entrance to Falkland Sound, Fanning Head and Goat Hill, respectively, are easily identified, especially the former.

As the entrance to the sound is approached, Tide Rock, Jersey Point, and White Rock can usually be made out.

When approaching Falkland Sound from N, head for the high double summit of Fanning Head or, if this is obscured, make good a course of 186° from a position 1.5 miles W of Eddystone Rock, until 2 miles off Race Point.

Then steer to pass E of Tide Rock. Tide Rock bearing more than 190° leads E of Sunk Rock.

The depths between Eddystone Rock and the entrance to the sound are fairly regular, over fine black speckled sand. A ledge extends 0.2 mile off Race Point, then to Fanning Head, the E shore is clear of dangers. Vessels entering the inner part of Port San Carlos should not proceed E of Hospital Point, 1.5 miles SE of the E tip of Fanning Island, without local knowledge.

From off Fanning Head, a vessel with local knowledge bound for San Carlos Water should alter course to keep the prominent rocky outcrop near the extremity of **Jersey Point** (51°26'S., 59°11'W.) bearing 314°, astern. This leads towards the entrance to San Carlos Water, clear of all dangers.

When the conspicuous white house at the head of San Carlos Water bears 159° alter course to that bearing which will lead abreast of Ajax Bay.

Vessels continuing SW through Falkland Sound from abeam of **Fanning Head** (51°28'S., 59°08'W.) follow the fairway towards the entrance to Main Passage, which lies between High Cliff Island and Swan Islands. Through main passage, after rounding Swan Island, vessels steer with the SE tip of that island astern bearing 062°.

When NW of the 5.5m patch, marked by kelp, which lies 2.5 miles W of the N end of West Tyssen, change course SSW to pass 1 mile E of West Islet, then SE to pass NW of Calista Island and the islets and rocks projecting NE from it.

A shoal depth of 9.1m was reported to lie 0.5 mile NE of West Islet.

Vessels entering Falkland Sound from S, should avoid the reef, marked by kelp, extending SW from the W tip of George Island. After passing Wood Shoal the directions described above should be followed in reverse order.

West Falkland Island

10.40 Pebble Island (51°17'S., 59°41'W.), whose E tip lies about 10 miles WNW of White Rock Point, is separated from the mainland by Tamar Pass. The N tip of Pebble Island, Cape Tamar, is a steep and cliffy promontory. Close off the cape are three or four sharply pointed rocks.

The peaks of Pebble Island are conspicuous when approaching from N, and are the best marks for identifying this section of coast.

Tamar Pass (51°20'S., 59°24'W.), which separates the E end of Pebble Island from the mainland of West Falkland Island, leads into Ship Harbor (Tamar Harbor) and Inner Pass, 1.5 miles SW. Tamar Pass is narrowed by a reef that projects halfway across it from the W side.

The kelp on this reef is run under by the strong tidal currents, and the eddies are very dangerous. Ship (Tamar) Harbor affords the first shelter W of Falkland Sound, but it should not be entered without local knowledge.

A rock, with a depth of 2m, and a 2m shoal, both covered with kelp, lie in the fairway between Tamar Pass and Inner Pass. This shoal has not been examined.

Tides—Currents.—One part of the flood current, running W along the N coast of West Falkland Island, runs S through Tamar Pass, where it attains a rate of 6 to 10 knots. The other part sweeps round Government Islet and enters Keppel Sound, SW of Pebble Island.

Directions.—Tamar Pass should only be used by vessels with local knowledge. Reportedly this pass is not difficult to navigate during slack water.

A vessel with a draft of 4.3m entered Pebble Sound from sea by passing about 0.1 mile W of the E entrance point to Tamar Pass, then 0.4 mile W of a prominent point 0.7 mile S, then 0.3 mile N of an island lying close N of the E entrance point of inner pass, and finally into Pebble Sound.

When proceeding NE through Inner Pass and Tamar Pass, enter Inner Pass, keeping in mid-channel. When the island situated close N of the E entrance point of Inner Pass is abeam to starboard alter course towards the prominent point 1 mile ENE of the island.

When 0.4 mile from this prominent point alter course to port to pass 0.15 mile off the E entrance point of Tamar Pass. Do not pass closer than 0.15 mile from the E entrance a rock lying off the point which may not show and on to which current sets.

A shoal depth of 6.4m reported lies 0.8 mile N of the E entrance point of Tamar Pass; this shoal has not been examined.

10.41 Elephant Bay (51°17'S., 59°34'W.) indents the N shore of Pebble Island about 6 miles NW of Tamar Pass. There is no good anchorage on the N side of Pebble Island, but with offshore winds temporary anchorage may be found by vessels with local knowledge on the W side of this bay.

There is a settlement on the S side of the narrow isthmus that forms the SW side of the bay. The approach to the settlement through Elephant Bay is not recommended.

Government Islet (51°13'S., 59°54'W.), with an elevation of 30m, is long and cliffy. Government Islet lies on a bank of kelp-covered rocks, the passage between being foul with kelp.

Shoal depths of 9 and 8.5m lie 0.8 mile and 1.5 miles W, respectively, of the W end of Government Islet.

Port Egmont Cays are comprised of two small islets, 30m high, and lie between 3.5 and 4.5 miles WNW of Government Islet. The main islands lie in an area of kelp in which there are some above-water rocks.

A rock, with a depth of 2m or less, and which sometime shows in heavy seas at LW, lies 0.5 mile E of the SE islet, just within the kelp area.

Wreck Island (51°09'S., 60°14'W.) lies about 9 miles WNW of Port Egmont Cays, and a reef projects 1 mile E and N from it. From N, Wreck Island first appears as 3 low islets, and actually it is very low, little more than a reef.

The area between Wreck and Sedge Islands, 4 miles W, is full of kelp-covered rocks visible at half-tide. Sedge Island consists of flat layers of rocks, the tops of which are covered with tussac grass. The N coast of this island is cliffy and from 5 to 10m high.

Vessels with local knowledge can find temporary anchorage off the W cove on the S coast of the island, in a depth of 33m, and. It was reported that Sedge Island lay 0.5 mile N of its charted position.

A rock, awash, has been reported to lie approximately 1 mile off the S shore of Sedge Island. Sollis Rock lies 1.5 miles S of Sedge Island. Also, it was reported that a patch of kelp is about 4 miles SW of the W end of Sedge Island.

10.42 Pebble Sound (51°22'S., 59°30'W.) lies between Pebble Island and the mainland, and is encumbered by many islands and shoals. This sound provides good anchorages for small vessels with local knowledge. Pebble Sound is entered from E through Tamar Pass and from W through North West Passage, Anxious Passage, and an unnamed passage.

North West Passage is located 1 mile SW of **Rabbit Point** (51°18'S., 59°42'W.). Sea Lion Islet, 3m high, lies on the NE side of the passage, close S of Rabbit Island. Paul Islet, low and grassy, and Horseshoe Island lie on its SW side. This channel should only be used by those vessels with local knowledge. Range beacons stand on Broken Island; in line bearing 141.75°, they lead through the channel.

A depth of 4.9m lies on the range line (141.75°) on a submerged ridge projecting from Sea Lion Islet to Paul Islet.

There are depths of 4.3m close NE of the leading line and of 3m and 1.5m at distances of 64m and 151m respectively, SW of the leading line.

To the NE of Horseshoe Island, the channel is constricted to a width of about 0.1 mile, within the 4m depth contour, by spits extending NE from that island and SW from Rabbit Island.

Tides—Currents.—The tidal currents in North West Passage may exceed 5 knots, and the channel should only be used at or near slack water. This flow continues to sweep through a part of Pebble Sound and meets that current that has entered from Tamar Pass, causing whirlpools and eddies. Slack

water is only of short duration, and then the opposite current begins to run with equal strength.

10.43 Anxious Passage (51°22'S., 59°48'W.) lies between the SW tip of Golding Island and Passage Island, and leads to Rock Harbor. Another passage, which is very narrow, also leads to Rock Harbor. Both above passages are intricate and can only be used by small vessels with local knowledge and are not recommended. Port Purvis is entered via a narrow entrance situated near the E end of Pebble Sound.

Keppel Sound lies between Keppel Island and the W end of Pebble Island, 4.5 miles ENE. This sound, which is entered between North Point and Keppel Islet, 2.25 miles ENE, is connected to Pebble Sound by North West Passage.

Cove Hill, 233m high, is a prominent cone-shaped peak which is located on the NE part of Keppel Island. A reef, on which are some rocks awash, and marked by kelp, projects 0.7 mile NE from North Point.

Another reef, also kelp-covered, projects 1.5 miles NE from Reef Point. Reef Point lies 2.75 miles SE of North Point. Kelp extends between Keppel Islet and a 2.7m shoal, 1 mile W.

Committee Bay (51°20'S., 59°54'W.), on the E side of Keppel Island, is entered between Lancaster Point and Gascoigne Point, 0.6 mile S. The settlement is located on the W side of the bay. The main house of the settlement, which is the nearest building to the shore, is white and visible to ships entering the bay on a clear day.

Close behind the main building are the ruins of the old mission which are not prominent from seaward.

An anchorage for vessels with local knowledge lies about 0.5 mile E of the settlement in depths of 3.7m. Vessels with drafts greater than 4.3m should not proceed W of a line joining the two entrance points of the bay. A kelp-covered reef, which partly dries, extends 183m NE of Gascoigne Point.

Bold Rocks, which are located 2 miles SSW of Reef Point, form a prominent circle of drying rocks. Two rocks, named East Bold Rocks, lie 0.5 mile NE of Bold Rocks.

There is an anchorage, for vessels with local knowledge, on the S side of the passage between Bold Point and Bold Rocks, in a depth of 11m.

Directions.—Vessels with local knowledge and intending to enter Keppel Sound from N should try to identify **Mount Harston** (51°17'S., 60°18'W.). This peak, 416m high, will be seen in clear weather, before Sedge and Wreck Islands, though its summit is not well-defined. There is a clear channel on either side of Port Egmont Cays.

The fairway into Keppel Sound is about 1 mile wide between the reef projecting NE from North Point and the kelp projecting from Keppel Islet. Vessels approaching from W enter North West passage at or near slack water.

10.44 Elephant Point (51°15'S., 60°18'W.) is the NW tip of Saunders Island. A group of below-water rocks lies 4.5 miles WNW of this point, and any kelp which marks this obstruction is usually swept under by the tidal currents. Race Rocks lie 1.25 miles NW of Elephant Point. There is a rocky patch with a depth of 6.1m, usually marked by a tide rip, that lies 0.75 mile N of Race Rocks.

Port Egmont (51°21'S., 60°00'W.) is formed by the SW coast of Keppel Island, the SE coast of Saunders Island, and

the N coast of West Falkland Island. Port Egmont provides good anchorage for those vessels with local knowledge. The tidal currents are not strong. The N, and usual entrance, between Saunders and Keppel Islands, is about 0.7 mile wide and free of dangers.

A small patch, marked by kelp, with a least depth of 11.6m, which is not always visible, lies 1.25 miles NW of Gull Point, the W tip of Keppel Island.

A below-water reef, marked by kelp, projects 0.5 mile NNW from Gull Point. Island Channel, with a least depth of 7.1m, leads to Port Egmont from Keppel Island. Small vessels with local knowledge can utilize Reef Channel, located at the SW end of Port Egmont between West Falkland Island and the SE coast of Saunders Island. This channel, which leads to Burnt Harbor and then to Byron Sound, is narrow, tortuous, and encumbered with rocks and kelp patches.

Tides—Currents.—Currents attain a rate of up to 5 knots and the kelp is clearly visible at LW.

Anchorage.—Vessels with local knowledge can utilize a berth 0.2 mile off Settlement Cove, 3 miles S of Gull Point, in a depth of 11m, sand and shells.

Anchorage may be found further SW in Sealers Cove, in a depth of 12.8m, mud and sand, which is better sheltered from S winds. It is considered unwise for any vessel to anchor closer than 0.25 off this cove owing to the very thick kelp.

The stern post of a wooden wreck lies close inshore in the NW part of Sealers Cove and is visible at LW. The settlement is situated 0.2 mile S of its charted position. The largest white house in its center, bearing 267°, leads into the anchorage.

Directions.—Vessels with local knowledge bound for Port Egmont from N should, as above, strive to identify Mount Harston. The entrance to Port Egmont is easily seen from the passage between Wreck Island and Port Egmont Cays.

Island Channel, with a least depth of 7.1m, leads to Port Egmont from Keppel Sound.

10.45 Carcass Island (51°16'S., 60°33'W.) is the largest of a chain of islets that project about 16 miles NW from the SW tip of Saunders Island. This island is prominent for a double peak, 262m high in its center. Off the NW end of Carcass Island lie The Twins, the outermost of the chain of islets. These two islets rise steeply to a height of 17m.

Off the SE end of Carcass Island are the steep-to Needles Rocks. Carcass Reef lies off the SW side of the island.

Port Pattison (51°18'S., 60°33'W.) lies within a bay off the SW side of Carcass Island; on the N shore is Carcass Island settlement. Kelp abounds in the bay and unless in possession of local knowledge vessels should keep outside the line joining the two entrance points. A rocky Islet lies between these headlands.

Anchorage.—Anchorage, with good holding ground, can also be found in a bay on the SE side of the island. The only kelp here can clearly be seen off the N entrance point of the bay. Vessels should not pass between Carcass Island and Needles Rocks.

Low Island and Dunbar Island lie 2 and 5 miles SE, respectively, of Carcass Island. A large shoal with a least depth of 11.9m lies 1.5 miles NE of Low Island. A kelp reef, with a least depth of 2.4m, extends nearly 1.5 miles E from the N end of Low Island.

A group of drying rocks lies 1.75 miles N of Dunbar Island while another drying rock lies 1.25 miles E of the E end of Dunbar Island. Button Islet, a hummock off the SE end of Low Island, is reported to be a good mark for the passage W of Dunbar Island. Rocky outcrops lie about 0.5 mile W and SW of Low Island.

Directions.—The recommended route for vessels with local knowledge into Byron Sound from N is that channel between Needles Rocks and Low Island, keeping 0.5 mile E of Needles Rocks. Due to the many dangers, passage between Button Islet and Dunbar Island is dangerous.

10.46 Byron Sound (51°25'S., 60°17'W.), of Saunders Island, is much exposed to W gales that send a heavy sea up to its head. Sloop Rock, which lies close to the shore near the NW end of the sound, is white and very prominent. The land S of Byron Sound is mountainous.

Mount Adam (51°36'S., 59°55'W.), the highest in the Falklands, rises to a height of 698m about 9 miles SE of **Hill Cove** (51°29'S., 60°05'W.).

Burnt Harbor is situated on the N shore of Byron Sound between Saunders and Burnt Island. This harbor affords the only good anchorage at the head of Byron Sound.

Fairway Reef in the W entrance, which dries up to 1.5m, forms two narrow channels suitable only for small vessels with local knowledge. The N channel is about 0.1 mile wide and steep-to; the S channel is 0.2 mile wide but shoals on its S side. Both channels are marked by kelp. Kelp Passage, the channel SE of Burnt Island, is very narrow and can only be used by boats.

The anchorage lies about 1.2 miles inside the W entrance in depths of 7 to 10.8m, mud.

West Point Island (51°21'S., 60°41'W.) is situated about 0.5 mile W of the tip of the peninsula that comprises the SW shore of Byron Sound. Gibraltar Reef projects 8.25 miles WNW of the NW tip of West Point Island. This kelp-covered reef has considerable tide rips except at slack water.

Gibraltar Rock, which is very prominent, is located on Gibraltar Reef, about 2 miles from Cape Terrible, the NW tip of West Point Island. White Rock, 6.1m high and pink in color, lies on the NW part of Gibraltar Reef.

Tides—Currents.—The flood current sets to the W along the N side of West Falkland Island for about 2 hours after it is HW in Port Egmont. At springs it runs at a rate of almost 3 knots off the points and around the islets, causing strong tide rips in heavy weather.

The flood current sets strongly around the W end of Carcass Island toward Gibraltar Reef, and also through all the passages into Byron Sound. There is little tidal current in that sound until as far W as Carcass Reef, where the flood gets strongly towards Hope Harbor and through it to the S. It attains a rate of 7 knots at springs; during the flood current there is a weak N eddy close under the E shore of West Point Pass.

The ebb or E current sets from Hope Harbor towards both ends of Carcass Island and through the channel E of the island to the N.

Again, this current is scarcely felt in Byron Sound. The tidal currents run directly across Gibraltar Reef at a rate of 5 knots.

The flood current runs S, after passing the NW point of Saunders Island, between Carcass Island and the islets near it, and through all the channels between West Point Island and the several Jason Islands.

In this area the last 4 hours flood and the first 2 hours ebb run to the N.

10.47 Hope Harbor (51°20'S., 60°40'W.) is entered W of Hope Point, and is formed by a cove on the E side of West Point Island.

Directions.—Westpoint Pass, known locally as Wooley Gut, is the channel that leads into Hope Harbor from S.

For vessels with local knowledge this passage is relatively simple to navigate, but tidal currents are strong.

Squalls have been known to descend from West Point Island during SW and W winds. These squalls form small waterspouts which rarely last for more than a few seconds.

Vessels with local knowledge heading, from N, for Hope Harbor or other harbors S of it should avoid passing W of Carcass Island. From Sedge or Wreck Islands to the E end of Carcass Island, the only known dangers are Sollis Rock which dries 2m, an 11.4m shoal 4 miles WSW of Sollis Rock, the 7.3m rocky patch 0.75 mile NNW of Race Rocks, and the below-water rocks 3.5 miles WNW of them.

A race projects 1 mile W from the 7.3m patch during strong winds, and it should be given a berth of 1 mile. From this position course can be made for Needles Rocks. The channel E of Needles Rocks is the preferred one, and then to the entrance to Hope Harbor, where the only danger is the 5.7m shoal 0.4 mile NNW of Hope Point.

Vessels entering Hope Harbor should not pass Hope Point nearer than 183m because kelp is under run by tidal currents.

The ebb current sets strongly to the E off the point. A tidal race exists between Hope Point and West Point Island, intensified on the flood during springs with SW or S winds.

Should it be necessary to pass to the W of Carcass Island, which is not recommended, the best passage is 1 mile W of The Twins and 1 mile E of the rock that breaks, 2.5 miles NNW of Carcass Island. West of this rock are some reefs, the kelp on which shows only at slack water.

Vessels should exercise caution to avoid these reefs, as no clearing marks can be given.

Anchorage.—Vessels with local knowledge can find anchorage, although restricted, in the cove on the E side of West Point Island. This anchorage has been used by a vessel of 2,641 grt and 92m long. There is a large patch of kelp off the entrance with a least depth of 12m.

This is the best anchorage for a long stay as it is not exposed to the heavy squalls from West Point Island.

Caution.—Vessels should take care not to mistake the low isthmus E of Hope Point for the harbor entrance in poor visibility. Hope Point, the NW tip of West Falkland Island ends in a low knob that is higher than the narrow isthmus close E of it. From N the entrance is not easily made out. It lies between the high ground of West Point Island and the lower ground E.

A shoal, with a least depth of 5.7m lies about 0.4 mile NNW of Hope Point. A ridge, with a least depth of 5.5m, projects S across Hope Harbor from a position ESE of Hope Point.

10.48 Jason Islands (51°00'S., 61°15'W.) form archipelago of islands that project about 40 miles NW from Carcass Island. Jason West Cay, located at the extremity of the chain and Jason East Cay, 5 miles E, are similar in nature, that is, low and small.

A patch of kelp, position doubtful, has been reported 6.5 miles N of Jason East Cay. There are several shoal patches and reported shoals lying within an area up to 12 miles NE, N, and NW from Jason East Cay. They may best be seen on the chart.

The shallowest known depth lying off Jason Islands is a 9.8m patch lying 12 miles NNW of Jason East Cay.

Steeple Jason, 1.5 miles SE of Jason East Cay, consists of two parts, which rise to elevations of 263 and 290m joined by a low, narrow isthmus.

Grand Jason, the largest and highest of the group, rises to an elevation of 361m. The only possible anchorage off the Jason Islands exists in a cove off the NE side of Grand Jason.

A vessel of 1,600 grt approaching from NE, found depths of more than 55m until within 0.5 mile of the shore, and anchored in this cove in 36m rock. Also, a vessel of a similar size anchored in the cove in 25m rock, with reasonable shelter from a SW gale. This vessel reported no signs of dragging in winds up to force 10.

Tidal currents are reported to run viciously through the Jason Islands, attaining rates of up to 8 knots at springs.

The Fridays (51°03'S., 60°57'W.) and Flat Jason, 3 miles SE, are moderately low. A strong race with heavy overfalls has been observed on either side of The Fridays. A shoal with a depth of 22m lies 0.7 mile SE of The Fridays. A reef was reported to extend up to 1 mile NE of the islets. A reef was reported to extend up to 1 mile N and NNW of Flat Jason.

Seal Rocks, with North Fur Island 1 mile ESE, are low and barren. A reef, with rocks, awash, extends 1.25 miles WNW from Seal Rocks.

Elephant Jason and South Jason, close SW, lie between Flat Jason and **South Fur Island** (51°15'S., 50°81'W.); they are steep-to and attain elevations of 208 and 288m, respectively.

A shoal, with a depth of 15.3m, located 5 miles WSW of South Jason, should be avoided.

Lindblad Reef, lying 1.5 miles S of South Jason, and extending over 2 miles WSW to ENE, has several drying rocks on it and often breaks. The area NE of this reef is unsurveyed.

Hope Reef projects 4.25 miles ENE from the NE tip of **South Jason** (51°12'S., 60°52'W.). The passage E of this reef, between North Fur and Carcass Islands, is encumbered with reefs, and kelp patches with tide rips.

Hunt Rock, 4.5 miles S of North Fur Island, has a depth of 7.8m but has not been examined. Goodwin Reef 6 miles ESE of North Fur Island, has a depth of 6.8m.

The passages between Jason Islands are generally clear of dangers, although tidal streams run strongly through them.

The Gammon Channel leads between Flat Jason and Elephant Jason. Hecate Passage, the channel between Elephant Jason and South Jason, has been sonar swept to a least depth of 28m, although a shoal with a depth of 25.5m charted 1.25 miles S of North Fur Island has not been disproved.

There are many dangers between South Jason and Westpoint Island, and the tidal streams run strongly.

Forrest Gap leads between South Jason and Lindblad Reef.

10.49 King George Bay (51°31'S., 60°39'W.), SW of Byron Sound, is entered between Death's Head and Dunnose Head, 15 miles S.

In almost the center of the entrance lies Split Island, 155m high. The passage into the bay on either side of the island is wide, deep and clear.

Port North, a deep bight on the N shore of King George Bay, is exposed to W and SW gales, and has depths from 18.3 to 29.3m. Cliff Island, with a rock, awash, and an islet close NE, lies off the entrance to Port North.

Bense Harbor, between the two Bense Islands and the S entrance point of Port North affords anchorage for small vessels. A clear passage runs through the harbor.

Rabbit Island (51°33'S., 60°29'W.), whose W side is high and prominent, lies about 5 miles SE of Cliff Island. Rocks, locally known as Lion Islets, lie close S of the island. A patch of kelp lies 1.75 miles W of the S end of Rabbit Island.

Hummock Island (51°37'S., 60°26'W.) is the best guide for a vessel heading up King George Bay. The peak forms a cliff on the N side and slopes S.

There are a chain of small islets between Rabbit and Hummock Island, through which there are three good passages. One of the passages is close to the S tip of Rabbit Island, and the other two lie on each side of an islet nearest to Hummock Island.

These passages are clear of known dangers, and as tidal currents set rapidly through them vessels should endeavor to remain in the middle of these passages.

10.50 Whaler Bay (51°33'S., 60°27'W.) affords good anchorage for vessels with local knowledge 0.5 mile ENE of Rabbit Island, except during winds from the SE.

The narrow channel between Rabbit Island and the mainland N is scarcely available for even the smallest vessels as the currents are strong. Roy Cove is a secure inlet entered three miles E of Rabbit Island.

There is an important settlement here and a pier with an alongside depth of 4.5m. There is swinging room for small vessels up to 60m in length.

Middle Island lies 2 miles ESE of Hummock Island and Gid's Island lies 1 mile further ESE. There is good anchorage off the E side of both of these islands.

Christmas Harbor (51°39'S., 60°15'W.) is located within an inlet at the head of King George Bay, and entered between Brown Point and Town Point, 2 miles S. There is an important settlement situated on the N shore of the Chartres River which flows into the head of the harbor.

The approach to this settlement is restricted by a sand bar SE of **Tide Islet** (51°40'S., 60°10'W.) and by shoaling in the final reaches. This sand bar is liable to shift and may reach further S than charted.

10.51 Brown Point (51°37'S., 60°15'W.), from a position either side of Hummock Island, has the appearance, to a vessel approaching, of a somewhat bold promontory that ends in 9.1m cliffs. Town Point, about 2 miles S, has a sandy aspect, though much of it is covered by tussock grass.

The entrance is obstructed by foul ground that projects 0.3 mile NW of Town Point. Also, a narrow patch of kelp, 0.75 miles long, lies in the middle of the outer part of the estuary,

with its NW extremity 1.25 miles ENE of Town Point. The passage SW of this patch can only be used by small boats.

The passage to the NE is clear of known dangers and has depths of 6.7m as far as Tide Islet. Nearly 1 mile SE of Tide Islet the estuary widens, but a bar, with depths of 4m near the S shore, projects across it.

This bar, which in mid-channel and to the N, dries in places, is not marked by kelp due to a sandy bottom.

Low Point (51°41'S., 60°08'W.) lies 2 miles SE of Tide Islet, and kelp-covered foul ground projects 0.3 mile W of a small islet SW of the point. Another area of kelp-covered foul ground is situated 0.7 mile ESE of this small islet, named Half-Tide Islet. Shallow Bay, whose entrance lies about 1 mile SW of Low Point, is foul.

Tides—Currents.—Tidal currents reach a maximum rate of 3 knots S of Tide Islet, and 3.5 knots in the narrows W of the settlement. The ebb is generally stronger than the flood. Elsewhere in the estuary the tidal currents are not as strong.

Anchorage.—Vessels with local knowledge can find a good anchorage abreast of Tide Islet in depths of 8.8 to 14m.

To avoid the strong tidal currents vessels with local knowledge can find better shelter with more swinging room, similar depths, in an area S and SE of Half-Tide Islet.

Directions.—The following directions were used by a vessel with a draft of 3.7m. Vessels with local knowledge bound for Christmas Harbor should head to pass at least 0.3 mile off Brown Point. Then steer to keep 0.2 mile off the N shore, which will lead N of the narrow patch of kelp in the middle of the outer section of the estuary. This patch generally is radar conspicuous when within 0.3 mile of it.

When clear of the kelp patch course should be changed to pass 0.15 mile SW of Tide Island and steer 151° for a conspicuous fence that lies in a valley 1.5 miles SSE of Tide Island. The beach end of the fence is radar conspicuous.

When about 1 mile from the fence change course to 119° to bring the N edge of the S shore just open of a prominent white bunkhouse at Chartres Settlement and stay S of the shallowest part of the bar 0.5 mile N of the fence.

When clear of the bar change course to 107° heading for **Shallop Point** (51°42'S., 60°05.3'W.), anchoring as convenient.

10.52 Passage Islands (51°36'S., 60°45'W.) are a group of islands that project about 11 miles NW of Dunnose Head, and separate King George Bay from Queen Charlotte Bay to the S. East Passage, off Dunnose Head, and Whale Passage between First and Second Islands, are clear of dangers.

West Passage is narrow, and False Passage, between Third and Fourth Islands, is totally blocked by kelp.

Round Islet and Sail Rock, lying close off the SE tip of Second Island, are good marks for Whale Passage, the widest passage between the islands. A kelp patch, on which there is a tide rip during strong breezes, lies 0.75 mile NW of Fourth Island.

Two rocks, awash, lie close NW of Fourth Island. Another rock, awash, the existence of which is doubtful, was reported to lie in Whale Passage, about 0.5 mile SE of Round Islet.

Tidal currents set directly through the passages, turning at about half flood and ebb by the shore. The flood current sets SW.

Queen Charlotte Bay (51°43'S., 60°44'W.) is entered between Dunnose Head and Swan Point, the NE tip of Weddell Island. This bay is mostly clear of dangers, and has within its confines many fine harbors. A depth of 17.3m lies 3.25 miles NE of Swan Point. A shoal depth of 10.1m lies 9 miles SSE of Swan Point.

Philomel Road, in the E part of the bay, is entered between Green Islet and Black Rock, 1.25 miles SSE. A vessel entering Philomel Road can pass close to the S side of Green Islet and alter course directly into the roadstead. The chart and a lookout for kelp will be better guides than any directions.

A narrow passage lies N from the islet and almost joins the kelp off Dick Point.

Shallow Harbor is positioned in the NW corner of Philomel Road and is entered on either side of an islet located 1.5 miles NE of Dick Point. Vessels passing W of the islet should give a wide berth to Shallow Point. Shallow Point lies about 0.7 mile W of the above islet; foul ground projects 183m outside of the kelp off this point.

Vessels with local knowledge can obtain good anchorage in Shallow Harbor in depths of 5.5 to 9.1m, mud.

10.53 Port Philomel (51°44'S., 60°13'W.) is entered via a narrow channel, named Philomel Pass, from the NE end of Philomel Road. Port Philomel, is a harbor comprised of two arms; Port Philomel projecting 7 miles ENE and Symonds Harbor 6 miles S.

There is a small bay on the N side of the pass named Halfway Cove, which affords good anchorage out of the tidal currents for those vessels with local knowledge.

Tides—Currents.—Currents in Philomel Pass run at a rate of 8 to 10 knots. These currents are particularly strong between the two islets in the narrows at the E end.

Within the inlet at Port Philomel, HW occurs 2.75 hours after HW in Philomel Road and Shallow Harbor. Also, the tide rise is 6m less.

Port Philomel affords good anchorage to those vessels with local knowledge in all parts in depths from 12.8 to 18.3m. Vessels with local knowledge entering Philomel Pass from SW keep within 0.2 or 0.3 mile off the shore SW of Tide Point, the S entrance point of the pass. This avoids the reef projecting SW from the N side of the entrance.

Once inside the pass a mid-channel course avoids all dangers as far as the anchorage off Halfway Cove; however, a drying ledge was observed to extend from the N shore N of Tide Point.

Vessels proceeding through Philomel Pass, even on the incoming current, should anchor off Halfway Cove and await slack water to pass through the narrows at the E end. Known dangers in Port Philomel are marked by kelp.

Port Richards lies in the SE part of Queen Charlotte Bay and is entered to the S of **Queen Point** (Penguin Point) (51°57'S., 60°38'W.).

Vessels with local knowledge can secure anchorage in a cove on the N side of the inlet about 6 miles E of Queen Point.

Double Creek lies on the S side of Port Richard about 5 miles SE of Queen Point. This creek separates into two arms close within its entrance.

A house is reported to be standing very near the head of the E arm. The entrance itself is narrowed by some islets and rocks

leaving passage to the W of them. Small vessels with local knowledge can secure anchorage S of the islets.

Carew Harbor and Anthony Creek are two small, but sheltered inlets on the S side of Queen Charlotte Bay. These inlets, both backed by high land, are entered on the E and W side, respectively of a point 3 miles SSW of Queen Point.

Small vessels with local knowledge may find anchorage in Carew Harbor in depths from 22 to 35m, and also in Anthony Creek. The S coves of both of these inlets offer anchorages in depths of 7.3 to 12.8m.

Those vessels needing to anchor in Queen Charlotte Bay would do better to anchor in Carew Harbor or Anthony Creek as opposed to Port Richards.

Anthony Creek is the preferred anchorage as the water is not so deep, and depths of 18.3 to 21.9m may be found off a cove on the W side, 1 mile inside the entrance.

10.54 Weddell Island (51°54'S., 61°00'W.), whose E shore forms the W side of Queen Charlotte Bay, is the SE and largest of a group of islands. Mount Weddell is the summit of the island and rises to a height of 381m. Weddell Island is separated from West Falkland Island by Smylie Channel.

Gull Harbor (51°53'S., 60°51'W.), situated on the E side of Weddell Island, is an excellent harbor. However, it has been reported that a heavy sea or swell sets in to this harbor during and after SE gales. There is a settlement in the NW part of the harbor with a small pier usable only by boats. A shoal, with a depth of 1m, lies 3.5 miles ESE of Mark Point.

Chatham Harbor is situated on the N side of Weddell Island and is entered E of **Bald Island** (51°46'S., 60°56'W.). All the known dangers within the harbor are marked by kelp.

Beacon Point (51°46'S., 60°57'W.) lies close SW of Bald Point, and is backed by a hill 83m high.

The channel between this point and Bald Island, small and round-topped with a high cliff on its W side, is clear of known dangers and has depths of 9.1m. Bald Road lies W of Chatham Harbor, and affords good anchorage for vessels with local knowledge.

This anchorage is approached via the above channel between Beacon Point and Bald Island.

Those vessels intending to pass E of Bald Island should give it a wide berth to avoid a patch of kelp lying NE.

Anchorage may then be taken in Bald Road or further up in Chatham Harbor. Elephant Cove, lying 2.5 miles S of Beacon Point, on the W side, affords the best anchorage in Chatham Harbor.

10.55 New Island (51°42'S., 61°17'W.), which forms the N side of Grey Channel, is a good mark for vessels bound into any part of King George or Charlotte Bays. The lofty cliffs of the N and W coasts of this island are notable.

To vessels coming from SW these high cliffs will be seen as the extremity of the land. From W, two small but high islands, North and Saddle, will be open N of New Island.

Between these islands and New Island is a narrow passage that is clear with much kelp.

The SE side of New Island is indented by North Harbor, Ship Harbor, and South Harbor. North Harbor is free from reported dangers. Kelp extends from the N shore and covers a shoal,

with a depth of 3.7m, lying 0.3 mile S of the N entrance point. There is shelter from all but E and SE gales.

Ship Harbor is located N of Beef Island, 55m high; Ship Island located in the NW part of the harbor. There are depths of at least 30m S and E of Ship Island, where holding ground, fine sand, is reported good. There is shelter from all but SE gales.

South Harbor is situated SW of Beef Island and is further protected by Coffin Island, 122m high. Both islands are steep-to, with deep water to within 183m.

Anchorage.—Vessels with local knowledge can secure anchorage close to the head of South Harbor, abreast a peninsula close off its W shore, in a depth of 21.9m, stiff sand and mud. The holding ground here is good with ample swinging room. The alignment of the N extremity of Coffin Island with the S end of Beef Island, bearing 113°, astern, leads to the anchorage.

Anchorage has also been obtained 0.4 mile SW of the S end of Beef Island, in 31m, good holding ground. Shelter from E gales is obtained by anchoring in the lee of Coffin Island.

Within Ship Harbor vessels with local knowledge can secure anchorage inside Ship Islet, located off the head of the harbor. The kelp is steep-to in every part of the harbor.

Vessels bound for Ship Harbor round **Bold Point** (51°40'S., 61°12'W.) and pass close SE of Cliff Island, about 2.2 miles SSW. From this position steer for Ship Islet at the head of the harbor.

Grey Channel divides New Island from Beaver Island and the islands to the E of it. This channel is clear of all dangers on either side of Seal Rocks, which lie in its SW and narrowest section, with the exception of a rock lying 0.35 mile NE of the NW extremity of Beaver Island.

Tides—Currents.—The tidal currents in Grey Channel attain a rate of 4 knots in a W direction and 6 knots in an E direction, at springs. Tidal currents of up to 1.5 knots may be experienced off the W coast of New Island; the N going current is stronger than the S going current.

Beaver Island (51°51'S., 61°16'W.) lies W of Weddell Island, and between them are many islands and anchorages.

Caution.—Tide rips have been observed about 1 mile N of Cape Percival, the W extremity of Beaver Island, when the tidal current is setting W against the prevailing W winds.

Vessels are advised to pass N of New Island and not use Grey Channel unless conditions are favorable.

Beaver Harbor (51°49'S., 61°13'W.) is situated on the E side of Beaver Island, and provides the best of the anchorages between the two islands. The harbor can be approached by vessels with local knowledge N or S of Beaver Island.

The N approach to Beaver Harbor from Grey Channel is between the E coast of Beaver Island and the Channel Islets, 0.5 mile E. This approach can be identified by two notable rocks, named The Colliers, which lie in the middle of the entrance. These rocks, which from some directions resemble a vessel under sail, can be passed close on either side.

From S of the Channel Islets the approach to Beaver Settlement lies 0.25 mile S of the narrow islet S of **Peak Point** (51°48'S., 61°11'W.) and 0.25 mile S of Rookery Island, which lies 1.25 miles SW of Peak Point.

Vessels then pass between Rookery Island and a small islet 0.3 mile S. Fish Creek is entered N of this islet. Also, a settlement, with a jetty and a flagstaff, stands near its head.

Vessels with local knowledge can obtain anchorage in Fish Creek close within the line joining the entrance points, 1 mile from the settlement, in a depth of 12.8m clay, with good holding ground.

Vessels approaching Beaver Harbor from S do so through Governor Channel, between the S part of Beaver Island and Staats Island. There is a depth of 12m in the channel 0.6 mile SW of the E extremity of Governor Island; the channel can be used during all but the heaviest gales.

Vessels continuing through Governor Channel to Beaver Harbor then pass E or W of Governor Island (51°51'S., 61°10'W.). The channel W, suitable only for small craft with local knowledge, has a least depth of 3.7m.

The channel E of Governor Island, known locally as "Stick in the Mud Passage," is reported to be clear of dangers but unpredictable eddies may occur at the S end of the passage.

10.56 Staats Island (51°54'S., 61°11'W.) comprises the S side of Governor Channel, and is remarkable for Staats Bluff, a detached cliff 138m high, at its SW end.

Tea Channel (Tea Island Passage) is the passage on the E side of **Tea Island** (51°53'S., 61°09'W.).

There are several above-water rocks grouped close together SW of **Weddell Point** (51°53'S., 61°07'W.). Within the kelp that stretches across the entrance, there is a least depth of 11m, but it only shows at slack water. There is a heavy race across the entrance with a S gale. Horse Block, a conspicuous needle-shaped rock, 67m high, lies 2.5 miles SSE of Weddell Point, and provides a good mark for making out Tea Channel from S.

French Harbor (51°50'S., 61°05'W.) lies E of the junction of Governor and Tea Channel, and though the channel is narrow, it is free of dangers.

Anchorage.—Vessels with local knowledge can find good anchorages sheltered from all winds off the NE point of Staats Island, in depths of 27.4 to 32.9m. Additionally, anchorage may be taken in French Harbor in the S part of the head of the inlet in depths of 9.1 to 12.8m.

There are other channels too intricate to be used by vessels without extensive local knowledge. The tidal currents set strongly through them and at times form a heavy race.

Caution.—A shoal depth of 22m was reported in a position about 0.2 mile E of Horse Block; lesser depths may exist in the vicinity.

10.57 Smylie Channel (51°59'S., 61°00'W.) lies between the S end of Weddell Island and the SW end of West Falkland Island, and is the entrance to Queen Charlotte Bay from SW. This channel is entered between Cape Orford and a point 2.5 miles NNE.

Cape Orford (52°00'S., 61°03'W.) comprises the W cliffy tip of a small isthmus.

Sea Dog Island, 42m high, lies about 0.5 mile NW of the cape. Sea Dog Passage, between Sea Dog Island and Cape Orford, is 0.5 mile wide.

Rock ledges extend 183m from the E side and 0.25 from the W side, the latter terminating in a depth of 7.9m. Kelp extends

completely cross the passage. Vessels should keep 0.2 mile from the E side of the passage, where depths exceed 11m.

10.58 Race Point (51°59'S., 60°59'W.) is the S tip of Weddell Island and lies 2.75 miles ENE of Cape Orford; kelp marks depths of 5m which extend 0.3 mile S of the point, while numerous rocks, some awash, extend 0.15 mile offshore between the point and Stop Island, 1.25 miles E.

A bank of kelp, containing numerous shoals, some awash, at its outer end, extends 0.75 mile W and NW from Barren Head, the N extremity of Black West Island, situated 1 mile S of Race Point. The outer shoal, lying about 0.4 mile NW of Barren Head, has a depth of 3.9m, another shoal, lying 0.4 mile N of the head, has a depth of 3.2m. The fairway through the reef, between these shoals and those S of Race Point, is 0.25 mile wide, with depths of 7.1 to 8.8m and a rock bottom.

Tides—Currents.—The tidal currents attain rates in the fairway of 6.5 knots. Kelp stretches completely across the channel, but is generally run under, even at slack water, by eddies and overfalls. There is a race to the W of Race Reef during the W current. On calm days, a standing wave up to 1.5m may form, the height doubling during W winds.

During the E current, series of boils and eddies forms E of Race Reef, without a standing wave.

Off Race Point two openings will be noticed, one on either side of Dyke Island. The S opening leads to South Harbor. Vessels can obtain anchorage in all parts of South Harbor.

Anchorage.—Good anchorage may be found in Stop Cove, entered N of Stop Islet, 1.25 miles NE of Race Point.

Stop Islet, which is a low, green tussac islet, is joined to Weddell Island by a sand spit which covers at HWS. Stop Cove is the best anchorage in Smylie channel.

The opening N of Dyke Island is the continuation of Smylie Channel into Queen Charlotte Bay. Smylie Rock, 1.5m high, lies in mid-channel, 3.5 miles NW of Stop Islet, and can be passed on either side.

The main channel, to the W, has depths of 24 to 44m. Rock Passage, to the E between the rock and Rock Point, the N extremity of Dyke Island, has depths of 11 to 13.8m about 0.3 mile N of Rock Point. A rock, which dries 0.5m, lies 0.4 mile N of Smylie Rock and a rock, awash, lies 183m S. Kelp and tide rips extend between this rock and Rock Point.

New Year Cove is an excellent harbor providing good anchorage, entered 0.75 mile NNW of Smylie Rock; the cove is subject to strong squalls during W gales.

Circum Island, lying in the NE entrance of Smylie Channel, can be passed on either side. The main channel, to the E, has depths of 17 to 46m while Circum Passage to the W, has a least depth of 10.2m in the center.

Directions.—Entering from the W, a vessel should pass 0.35 mile S of Race Point, steering 103° with the S extremity of Dyke Island ahead on that bearing until Stop Island is abeam; then alter course NE to steer 052° with Smylie Rock ahead on that bearing, passing 0.3 mile NW of South West Point on Dyke Island.

When 0.6 mile from Smylie Rock, course should be altered NNE to steer 025° on the SE extremity of Circum Island.

When 0.5 mile from Circum Island course should be altered ENE to 058° with Hadassah Point, the S entrance point of New Year Cove, astern, bearing 238°, into Queen Charlotte Bay.

Caution.—The channel should be navigated with caution as the kelp, especially on the S side, is always run under, except at slack water. A vessel entering the channel from the W should note that the kelp on both sides of the narrows S of Race Point is visible only at slack water.

10.59 Rodney Cove (52°03'S., 60°59'W.) is a secure and safe anchorage for small vessels with local knowledge. The kelp projects almost across the entrance leaving a small lane of clear water near the middle. Vessels can anchor in any part of the cove, within the kelp, in depths of 5.5 to 14.6m.

Castle Rock, 52m high, lies 1.75 miles WNW of **Stephens Bluff** (52°11'S., 60°44'W.). Both Stephens Bluff and Castle Rock appear similar from WNW and W, that is, steep-to.

Port Stephens (52°12'S., 60°42'W.) is approached between Stephens Bluff and a point 2 miles E. Three Crowns, a notable hill with 3 summits of bare rock, attains a height of 146m 0.5 mile E of the point. Stephens Bluff is conspicuous and is the S end of an island connected to West Falkland Island by a shallow spit.

The entrance, which is 0.3 mile wide and is easily recognized, lies between **Pea Point** (52°10'S., 60°42'W.) and the W end of Cross Island, both cliffy and 18 to 21m high. Streamers of kelp will be seen in the approach, but there are ample depths.

Kits Creek lies SE of Cross Island and has an entrance 0.15 mile wide. Vessels with local knowledge can find good anchorage here in depths of 11 to 31.1m.

Anchor Inlet is entered 1 mile NE of Pea Point and affords good anchorage to those vessels with local knowledge, off a sandy beach on the E side, 0.5 mile within the entrance, in depths of 16.5 to 23.8m, sand and mud.

At the head of the cove at the NW end of Port Stephens is a settlement comprised of some red-roofed houses and a flagstaff. Also, a wool shed and a boat jetty are situated near the settlement on the N side of this cove. A stone cairn is located on the point 0.75 mile SE of the settlement.

Anchorage.—Vessels with local knowledge anchoring for the night will find a convenient place about 1 mile SW of Pea Point in depths of 11 to 18.3m, sand and mud.

Vessels with local knowledge can find good anchorage in the NW part of Port Stephens, in a depth of 25.6m with **Stephens Peak** (52°07'S., 60°50'W.) bearing 205°, distant 1.7 miles. This is a sheltered berth with a bottom consisting of a thin layer of mud rock.

Directions.—Vessels with local knowledge should have little trouble entering Port Stephens keeping in mind that S and SW winds cause a heavy swell in the entrance.

The approach from W passes well off Castle Rock and Stephens Bluff.

However, if much swell from SW or S is present, open up the entrance well before standing in. From a position abreast of Stephens Bluff head E until the W tip of Cross Island bears 012°, and then alter course towards the entrance. Kelp streamers may be seen, but, these can be avoided by keeping a little E of this line.

When within the entrance pass midway between the islets NE of Pea Point and the reef about 0.2 mile WNW, then shaping a course for Anchor Inlet or the settlement in the NW section of Port Stephens.

10.60 Cape Meredith (52°15'S., 60°39'W.) lies about 4 miles SE of the entrance of Port Stephens. There is a heavy race off the cape with S winds, and tidal currents attain a rate of 3 knots. A shoal, with a depth of 12.8m position approximate, was reported to lie about 0.5 mile S of the cape.

Several reported depths of between 25 and 52m lying between 1.5 and 3 miles SW of the cape; shallower depths may exist in this vicinity.

Arch Islands (52°13'S., 60°27'W.), which lie 7 miles NE of Cape Meredith, are distinguished by their rugged appearance and sheer light-colored cliffs. The arch, from which these islands take their name, lies at the W end of the SW island.

The Clump Islets lie 0.2 mile W of Arch Islands. Clegg Rock, with a least depth of 3.7m, lies 1 mile S of Clump Islets. This kelp-marked shoal breaks in heavy weather and may be run under by tidal currents.

Arch Road, an anchorage for small craft, is entered E of Clump Islets and between it and the SW end SW Arch Island.

This anchorage is preferred to that of Port Albemarle because of more convenient depths. Vessels lie in Arch Road well sheltered from the swell, but exposed to the full force of the wind.

Albemarle Rock (52°13'S., 60°23'W.), 73m high, is saddle-shaped at the top, and whitened by birds on its sides. This prominent, sheer rock is a good guide for making Port Albemarle. A shoal depth of 8.9m lies close W of the S end of Albemarle Rock and another 7.9m shoal lies 0.2 mile NNE of the N end of Albemarle Rock.

Port Albemarle (52°11'S., 60°26'W.) is entered either through Arch Road or between the NE tip of Arch Islands and Lucas Point, 2 miles NE. The depths within this harbor are too great for anchoring. Lucas Bay lies N of Port Albemarle and is entered E of Lucas Reef. Good anchorage may be found in Lucas Bay.

Albemarle Harbor lies 5 miles NW of the road at the head of the narrow North West Arm.

Anchorage can be obtained in depths of from 18 to 21m. West Arm is clear of all dangers except for a sandy spit on the S side of the entrance.

Vessels with local knowledge can take anchorage sheltered from all but winds from ESE, in 14.6 to 18.2m sand, about 0.5 mile SE of the entrance to West Arm.

Chaffers Gullet is entered close NE of Lucas Point and its branches of water project several miles inland.

However, it is too narrow to call for a more detailed description and should only be used by small vessels with local knowledge.

Wood Shoal, over 4 miles in extent, lies 8.5 miles ENE of Lucas Point. There are several isolated heads with less than 2m. However, the sea has been known to break during severe S gales and therefore may be shallower and should be avoided.

Wood Shoal is marked by kelp, extending up to 1.5 miles WSW, that might not be visible.

A patch of kelp, 2 miles SW of Wood Shoal, covers a depth of about 21m.

10.61 Port Edgar (52°00'S., 60°14'W.) is entered between South Head, the N extremity of Edgar Ridge, and North Head, 137m NE. South Head rises to a height of 127m. North Head rises to a height of 171m about 1 mile NE. Both these bluff

headlands are easily made out after making Cape Meredith and Arch Islands.

The kelp-fringed rocks on both sides of the entrance are steep-to.

The tidal currents in the entrance are weak, and a heavy swell continues to run for sometime after a S gale.

Gull Point is situated on the NW shore of Port Edgar, 1.5 miles NW of North Head. A reef projects 91m E of the point, with a rock at its outer end from which foul ground projects 183m NE.

There is a settlement about 3 miles SSW of South Head. A narrow tongue of land called Settlement Spit projects about 0.5 mile N abreast the settlement, forming the E side of Settlement Creek.

Anchorage.—Vessels with local knowledge can anchor anywhere in the S arm of Port Edgar, off Edgar Ridge, in depths of 11 to 31m sand or mud.

A good berth lies in the middle of this arm 0.2 mile E of the pier that lies on the E side of the S end of Settlement Spit, in a depth 12.8m, mud.

10.62 Fox Bay (51°59'S., 60°01'W.) is entered between West Head and East Head, 2.5 miles E. Fox Bay is exposed during S winds to a heavy sea.

However, small vessels with local knowledge, if caught here, can find good anchorage in North Arm at the W end of the head of the bay.

There are settlements on both sides of North Arm, about 0.5 mile above the first flat island. Both settlements have T-shaped jetties usable only by local craft. Fox Bay East Settlement is the port of entry to West Falkland Island for vessels over 15 grt. Vessels under 15 grt should report to Stanley for clearance.

Anchorage.—Within North Arm vessels with local knowledge can find good anchorage in depths of 5.5 to 7.3m, stiff mud, with Flat Islet bearing 190° distant 0.3 mile.

Flat Islet lies close within the entrance of North Arm off the W shore.

Directions.—Vessels with local knowledge can approach North Arm via a channel between Knob Islet and the kelp E.

This kelp projects WSW from Kelp Point, which lies at the head of the bay 2 miles NW of East Head, to within 0.35 mile of Knob Islet. The kelp on either side marks the channel.

A small detached patch of kelp lies in the channel 0.7 mile ENE of Knob Islet.

South Georgia and the South Sandwich Islands

10.63 Shag Rocks (Rocas Cormoran) (53°32'S., 42°02'W.) are comprised of six main rocks which appear to be arranged in two groups of three. Shag Rocks are covered with guano giving them a light brown appearance. The main rock is 70m high. Black Rock, 3m high, lies 10 miles SE of Shag Rocks. A rock, over which the sea breaks heavily, lies 0.5 mile E of Black Rock.

Shag Rocks and Black Rock have been reported to lie 5.5 miles S and 0.5 mile E, respectively, of their charted positions.

South Georgia (54°15'S., 36°45'W.), a dependency of the Falkland Islands, is barren, mountainous and lies about 700 miles ESE of the Falkland Islands. For aspect, weather, ice, etc., see paragraph 10.1.

Directions.—The following represents general directions for making the NW end of South Georgia from NW. In clear weather, bearing of Willis Islands and Bird Island will give a good position and, Cape North will be easily made out.

However, should the weather be thick, vessels should try to make the land at Cape Buller to order to avoid passing W of the island. Cape Buller, because of its elevation and rugged nature, is easily identified.

The Welcome Islets and small rocks that lie W of cape are the only off-lying islands on this section of coast and they serve to also serve to render it unmistakable.

Fortuna Glacier, about 15 miles ESE of Bay of Islets, is very conspicuous when viewed from NE. After making Cape Buller the coast E is easily followed, the Bay of Isles, being readily apparent, has within it several glaciers. From the Bay of Isles course should be changed to pass Cape Saunders, which can usually be made out if close in, but Larsen Point, farther E and also low lying, is generally easier to distinguish.

Cape George, 16 miles SE of Cape Saunders, is cone-shaped and stands out well from the land with some off-lying rocks. The coast between Cape Buller and Cape George appears to be free of all dangers beyond about 3 miles from the land.

Nordenskjold Glacier is a good mark for approaching Cumberland Bay. If the weather is clear, Mount Paget, the highest peak on South Georgia, brought to bear 197° will lead towards Cumberland Bay. This mountain is snow covered and saddle-shaped. The bottom in this vicinity is very irregular and is not a reliable indicator of the nearness of land.

For the most part the holding ground at most of the anchorages is poor, and gales come up with little or no warning.

10.64 Willis Islands (54°00'S., 38°13'W.) are the outer group of a chain of islands and rocks that project 10 miles W of **Cape Alexandra** (54°00'S., 38°01'W.), the NW tip of the main land of South Georgia.

Bird Island forms the main group, which is separated from Willis Islands by Stewart Strait. Willis Islands are comprised of seven tussock-covered islands and a number of rocks.

Main Island, the largest of the group, is steep-sided and rocky with a cone-shaped summit near its E side that rises to a height of 550m. The top is frequently overhung with clouds when other peaks are clear.

Acorn Rock, with an elevation of 20m, lies 0.4 mile off the NW side of Main Island.

Ramp Rocks are made up of three barren rocks, the highest of which is 32m. These rocks lie 2.5 miles WNW of Main Island. Tiger Rocks, the highest of which is 23m high, lies 0.7 mile E of Ramp Rock.

Holgate Shoal, with 11m, lies 0.8 mile ENE of Tiger Rock. Bryde Rocks, the highest being 17.7m, lie 1 mile WSW of Johannesen Point, the SW point of Main Island.

The triangle created by Ramp Rock, Main Island and Bryde Rocks has within it a region of confused sea and tidal disturbance, and this area should be approached with caution.

Pugh Shoal, with a depth of 10m, lies 2.25 miles S of Main Island. This shoal breaks in any but calm weather. Shoal patches lie 0.8 mile W.

Vaughan Island (54°00'S., 38°11'W.) has a prominent cone-shaped peak 145m high and is separated W from Main Island by a boat passage.

Proud Island, which forms part of the W side of Stewart Strait, is tussock-covered and a good landmark because of a vertical rock face, 95m high at the NE tip.

10.65 Stewart Strait (54°00'S., 38°06'W.), almost two miles wide at its narrowest part, lies between Proud Island and Bird Island. The navigation of Stewart Strait requires extensive local knowledge as there are many dangers. Also, the bottom is extremely irregular causing tidal eddies and even in calm weather the swell is noticeable.

Owen Shoals, with depths of 9.8 and 9.1m at the W and E ends, lies 3 miles NNE of Proud Island. Elliot Rock, which always breaks, lies about 0.3 mile W of Bird Island; a 12.8m shoal lies 0.5 mile N of the central N extremity of Bird Island.

Vessels with extensive local knowledge usually pass through the strait on a course of 360° or 180° passing 0.45 mile W of Elliot Rock.

Bird Island, forming the E side of Stewart Strait, has as its NE tip, Farewell Point, a tussock-covered promontory that is not conspicuous unless the sun is shining upon it.

Roche Peak is the highest point of Bird Island, rising to an elevation of 365m, 0.75 mile W of Farewell Point.

Stejneger Peak lies in the NW part of Bird Island and rises to a height of 186m. This peak, which has a dome-shaped top of white stone and its lower slopes are tussock-covered, is a useful landmark as it is prominent from many angles.

Johnson Cove, on the SW tip of Bird Island, affords temporary anchorage to small vessels with local knowledge, but is exposed to the prevailing SW winds.

Gony Point is the conspicuous promontory of Black Cliffs, 35m high, which forms the SE point of Bird Island.

Bird Sound lies between Bird Island and Cape Alexandra, and is about 0.3 mile wide at its narrowest point between Gony Point and Pillar Rock, a conspicuous rock stack.

This sound, which is much encumbered by shoals, is dangerous in any but calm weather and local knowledge is essential. Tidal currents flood SW in Bird Sound and there is a prevailing N current.

Hornaday Rock, which dries 1.5m, lies 0.2 mile S of Gony Point, in the center of Bird Sound.

There are no satisfactory anchorages in the bay SW of Bird Sound, although temporary shelter has been found at times.

10.66 Elsehul Harbor (54°01'S., 37°58'W.) is a small port that is entered between **Post Rock** (54°01'S., 37°59'W.) and Cape Pride, 0.5 mile NE.

Vessels with local knowledge can find adequate anchorage here in all but NW winds subject to an occasional swell, the size of which depends on the direction of the wind.

The approaches from N appear mostly clear except for a reef, with a least depth of 7m, and a shoal, with a least depth of 14.6m, 0.6 mile ESE and E, respectively, of Cape Alexandra. Also, a rock with a depth of 18.3m lies 0.35 mile NNW of Post Rock.

The Knob is a conspicuous promontory on the W side of the bay, and rises to 58m, 0.3 mile from the head. Stina Rock, 33m

high, is prominent from N and lies on the E side of the bay close NW of Cape Pride.

Fairway Patch, with a least depth of 9.4m, lies almost in the middle of the entrance, about 0.3 mile SSW of Cape Pride. A shoal patch lies in the middle of the harbor between Fairway Patch and Middle Ground, a shoal in the entrance to inner bay. All these shoals are marked by kelp.

Anchorage.—Vessels with local knowledge can find temporary anchorage in the outer harbor in a depth of 25m about 0.2 mile SW of Stima Rock. Restricted anchorage can be found in Inner Bay, in 10m, sand, SE of The Knob.

Sorn (53°59'S., 37°55'W.), 73m high, is the N of two rocky islets, situated 2 miles ENE of Cape Pride. This islet, which lies close offshore, has a sharp pointed top, conspicuous from E or W.

10.67 Right Whale Bay (54°00'S., 37°40'W.) is entered between Nameless Point and Craigie Point, 1.5 miles SE.

Except for a moraine beach at its W end this bay's coast is largely steep and reef-fringed. An unexamined patch, which breaks during E gales, lies 0.5 mile W of Craigie Point.

Vessels with local knowledge can obtain anchorage sheltered from all but E winds in the inner bay. However, W winds blow with considerable strength down the moraine and across the beach. The anchorage is not safe when E winds raise a swell. Exposed anchorage can be taken in a depth of 20m, good holding ground 0.35 mile NW of Bluff Point. Bluff Point lies 0.7 mile WSW of Craigie Point.

Cape Buller (53°59'S., 37°22'W.) lies about 10 miles E of Craigie Point, and its summit, Pyramid Peak, is 473m high.

The cape is easily made out for its height and rugged appearance. Welcome Islets lie 4.5 miles W of Cape Buller and are the only off-lying islets off this part of coast.

These islets range in height from 70 to 88m high; through one of which is a natural arch. Sky Rock, 3m high, lies 0.75 mile S of the main rocks, the space between being foul by kelp, with a narrow channel between. Kelp lies 0.5 mile S of Sky Rock. High Rock, 29m high, lies N of the Welcome Islets.

Three isolated shoal patches, 26m, 29m and 19m lie up to 3.5 miles NW of Welcome Islets.

A rock with a depth less than 1.8m lies 1.5 miles W of High Rock.

Anchorage.—Vessels with local knowledge can find temporary anchorage in depths of 18 to 27m in a small bay situated 1 mile W of Cape Buller, named Sitka Bay.

Sitka Bay, though sheltered from W and SW, is too restricted in size to be comfortable in strong and shifting gusts.

10.68 Bay of Isles (54°00'S., 37°20'W.) is entered between Cape Buller and Cape Wilson, nearly 8 miles ESE. The shores of this bay are barren and glaciated while the off-lying islands are well covered with tussock and surrounded by kelp.

Barlas Bank, with a depth of 27m reported to lie 1.5 miles E of Cape Buller. A steep sea runs over this bank when a heavy swell is running. Within the bay are a W and E group of islands which are best shown on the area chart.

Rescue Rock, with a depth of 3.1m and surrounded by kelp, lies 1 mile NE of Skua Island. In a big swell the sea breaks over this rock. In the channel between Rescue Rock and Skua Island, 1 mile SW, there is a least depth of 28m. There are

several coves in the Bay of Isles but there are few adequate anchorages.

Koppervik, a small cove 1.75 miles SW of Cape Buller, affords anchorage for small vessels in a depth of 21m, sand, but it is exposed to winds from the S.

Rosita Harbor (54°01'S., 37°26'W.) has general depths from 16.6 to 51m, shoaling gradually to its head. Vessels have regularly found anchorage here in a depth of 44m, mud, good holding ground, with Ram Head, the S entrance point, bearing 170°, distance 0.4 mile.

A shoal depth of 22m lies in the S approaches to Rosita Harbor, about 0.5 mile E of Ram Head. Camp Bay, situated close S of Rosita Harbor, affords anchorage depth of 55m, sand, with Shag Point, the S entrance point bearing 159°, distant 0.45 mile. A swell frequently sets into this bay.

Kelp Bank, with a least known depth of 16.5m, lies 3 miles NE of Cape Wilson.

During a heavy swell the sea breaks over this bank and it should be avoided.

Cape Crewe (54°02'S., 37°08'W.) is the N entrance point of Cook Bay. A conspicuous white gallows stands 137m SW of the cape. Crewe Rock, 0.3m high, and surrounded by kelp, lies 91m E of Cape Crewe. Olav Rocks, 6m high, lie about 0.6 mile ESE of the same cape.

Prince Olav Harbor (54°02'S., 37°09'W.) ([World Port Index No. 14020](#)) lies in the inner part of Cook Bay entered between Point Abrahamsen and Sheep Point, 0.5 mile S. A tower stands on Sheep Point. This harbor has within it three bays, namely, North Bay, South Bay, and East Bay.

North Bay offers shelter on its S side, safe in almost all winds, there being no swell except during E gales. There is a 6.4m patch in the middle of North Bay 183m NW of Pig Point.

Within North Bay SW winds attain hurricane force at times, but winds from other directions are scarcely felt. A former whaling station, reported dismantled, derelict, and deserted, is situated at the head of North Bay.

South Bay is protected from swell by Brutus Island, though subject to occasional violent SW winds.

Vessels may find shelter here subject to the above winds in depths of 26 to 40m, mud, good holding ground.

Directions.—Vessels heading to Prince Olav Harbor should make Cape Crewe, taking care to avoid all the above-mentioned dangers..

Both Crewe Rock and Olav Rock should be given a wide berth also staying clear of an 11m patch about 0.2 E of Port Abrahamsen. Pig Point, marked by a prominent building close to the water's edge, bearing 266°, will lead in mid-channel to North Bay N of Brutus Island. Vessels going to South Bay head midway between Brutus Island and Restitution Point.

Possession Bay is entered SE of **Black Head** (54°04'S., 37°06'W.) and is the most windy place in South Georgia. Waterfall Bay, close NE of Possession Bay, is notable for a waterfall that is conspicuous from the NW.

10.69 Cape Constance (54°03'S., 36°59'W.) is situated about 5 miles E of Black Head. This cape is separated into two fairly low tussock-covered spurs, the E of which being Antarctic Point. Between the spurs is Tornquist Bay, which is not recommended.

Blue Whale Harbor (54°04'S., 37°01'W.), which lies 1 mile SW of Cape Constance, is an excellent, sheltered, though restricted, anchorage. A good berth lies in the NW part of the harbor in a depth of 12.8m; also, another lies in the S part in a depth of 22m mud and sand, S of the kelp.

Directions.—Passing through the entrance, vessels should favor the W side, remaining fairly close off Shelter Point.

Vessels can then anchor under the lee of this point or continue further in, passing W of the central patch of kelp, through a narrow, deep channel anchoring SW of Clear Point, on the E side of the harbor.

Antarctic Bay, entered about 2 miles SE of Cape Constance, affords indifferent anchorage in deep water subject to violent winds off the glaciers and ice.

Fortuna Glacier, a very conspicuous landmark when approaching South Georgia from NE, lies just W of **Cape Best** (54°05'S., 36°49'W.). Two tussock-covered islets, named The Guides, 21 and 9m high, lie 1.75 miles NW of Cape Best.

A rock, with a depth less than 3.4m, was reported to lie 0.75 mile NNE of Cape Best.

Fortuna Bay (54°05'S., 36°46'W.) lies between Cape Best and Robertson Point, 1.5 miles SE. For the most part this bay is very deep and steep-to, with the exception of Anchorage Bay. Within Anchorage Bay, on the W side, there is good anchorage in depths of 27 to 37m, mud and sand. There is an occasional swell with N winds, and at times the wind blows with some violence from the SW. This bay is partially protected by Fortuna Rocks.

Stromness Bay lies between **Cape Saunders** (54°08'S., 36°38'W.) and Busen Point, about 3.2 miles SE.

Within the bay on the W side are Leith, Stromness and Husvik harbors.

Black Rocks, one of which is 4.6m high, lies about 0.3 mile ESE of Framnaes Point. The most SW of these rocks is awash.

A rock, which dries, and surrounded by kelp, lies about 0.5 mile NNE of Framnaes Point.

The passage between Framnaes Point and Black Rocks was formerly used by whalers but it is not the preferred channel.

Middle Ground Rock lies 1.5 miles SE of Cape Saunders, and is kelp-covered, with depths of 3.7 to 5.5m.

With a heavy NE swell the sea breaks on this rock. A patch with a depth of 12.8m lies 0.75 mile farther ESE.

Foul ground projects about 0.6 mile to the NW from Busen Point. The preferred channel lies between Black Rocks and Middle Ground Rock.

Leith Harbor (54°08'S., 36°41'W.), on the NW side of Stromness Bay, was the sight of a now abandoned whaling station on its NW side. The land rises steeply W of this station to mountains 610m high. The harbor affords good anchorage, but NW winds blow with great strength. The harbor in the vicinity of the whaling station was choked with kelp. A dangerous wreck lies close S of the main jetty.

10.70 Stromness Harbor (54°09'S., 36°42'W.) ([World Port Index No. 14040](#)), situated on the W side of the bay, has an abandoned whaling station with two floating dry docks, which are submerged, at its head. Grass Island lies at the entrance to the harbor, and rises to a height of 75m.

Bill Rock, 4.6m high, lies 0.3 mile NNW of Tonsberg Point, the SE entrance point of this harbor. Foul ground projects E and ENE from Bill Rock, and many shoals are charted between it and Tonsberg Point.

Anchorage.—Anchorage may be found in a depth of 55m off the whaling station, but the depths increase rapidly E and gales blow offshore with hurricane force.

Near **Harbor Point** (54°09'S., 36°41'W.), the NW entrance point of Stromness Harbor, excellent anchorage can be found in depths of 37 to 46m. A vessel can lie here at single anchor in relatively calm weather while a gale is blowing in Leith and Stromness Harbors.

Husvik Harbor (54°10'S., 36°39'W.) lies in the SW part of Stromness Bay, between Tonsberg Point and Kelp Point, 0.75 mile SE. The inner portion of this harbor, which is entered between Point Purvis and Kanin Point, 0.75 mile SW, is fronted and protected by Bar Rocks.

There are two primary channels which lead into the inner part of this harbor. Main Channel, the S one, has a least depth of 16.5m, and leads between Bar Rocks and the reef projecting 137m N from Kanin Point. Whaler Channel lies about 0.1 mile NNE of Bar Rocks and has a least depth of 11m. The other two secondary channels are narrow and seldom used.

A wooden pier, with a depth of 8m at its seaward end decreasing to 2m at its W end and which maybe in a poor state of repair, stands about 183m S of a prominent bluff about 21m high. There is some kelp in the approaches to the pier.

Directions.—Vessels bound for Stromness Bay head for Tonsberg Point bearing 225°. This course will lead between Black Rocks and Middle Ground Rock. Vessels continuing to Leith or Stromness Harbors head for Harbor Point bearing 270°, when the SW edge of Black Rocks is abeam.

Vessels bound for Husvik Harbor should proceed as above until passed Middle Ground Rock and then steer so to pass 0.25 mile off Tonsberg Point. Tonsberg Point is not easily made out against its backdrop unless snow is apparent.

Tonsberg Point can be identified by its slightly domed summit and sheer sides, with rocks at its base. After passing Tonsberg Point, steer a SW course for the anchorage about 0.3 mile NE of Kanin Point.

10.71 Jason Island (54°11'S., 36°30'W.) is kelp-fringed and lies 2.25 miles ESE of Busen Point. This island should be given a berth of 1 mile. A saddle hill, named The Crutch, lies 1 mile W of Jason Island, and is an excellent mark.

Cumberland Bay is entered between Larsen Point and Barff Point, 4 miles SE. This bay is divided into two parts known as Cumberland West Bay and Cumberland East Bay.

Barff Point (54°14'S., 36°24'W.) is dark in color and forbidding.

Right Whale Rocks lie 0.25 mile N of Barff Point and are covered with tussock grass with kelp projecting off them. A conspicuous hut with a red roof stands on the W rock. A disused lighthouse stands on the N part of the E rock.

Merton Passage lies between Right Whale Rocks and a rock, awash, between them and Barff Point; this passage has not been fully surveyed and except for small vessels with local knowledge it is not recommended.

A shoal, with a depth of 9m, lies about 0.1 mile NW of Right Whale Rocks. A patch of kelp, with a least known depth of 8.8m, lies 0.75 mile SW of Barff Point.

Cumberland West Bay is entered between Larsen Point and Sappho Point, 3 miles S. Sappho Point is the NE tip of the headland that separates Cumberland West from Cumberland East Bay. Glaciers spill into the head of Cumberland West Bay filling it with brash ice. Jason Harbor, on the NW shore of Cumberland West Bay, affords anchorage in about 18 to 46m mud, but it is not sheltered.

During SW gales the harbor may fill up with ice from the glaciers at the head of the bay. Also, a swell sets in with strong SE winds. Maiviken is a bay on the S side of Cumberland West Bay, entered 1.25 miles WNW of Sappho Point.

Anchorage.—This bay affords good anchorage in depths of 24 to 47m, mud, sheltered from SW and W winds. George Rock, on the W side of this bay, lies about 0.2 SSW of Rocky Point.

Cumberland East Bay is entered between Sappho and Barff Points, 2.5 miles E. This bay appears to be deep throughout with no dangers more than 0.5 mile from its shores.

The glacier at the head of this bay is constantly calving into the bay. This glacier front is about 21m high and there is a depth of 115m close off it.

At about the middle of the W side of the bay is the entrance to Moraine Fjord, which is blocked by a reef making it useless for navigation; the sea breaks on this reef in all but the calmest weather. Dartmouth Point, the E entrance point of Moraine Fjord, is low and tussock-covered, with a stony beach.

Small vessels with local knowledge can obtain anchorage in depths of 13 to 30m, in a cove on the E side of Cumberland East Bay close S of Barff Point.

However, within this cove it is foul in spots and there is a lot of kelp. Sandebugten, a cove 4 miles S of Barff Point, is fairly sheltered except from NW.

Caution.—This bay is, at times, subject to violent SW winds which come up without warning. Growlers and brash, from the glacier at the head, are always present.

10.72 King Edward Cove (54°17'S., 36°29'W.) lies about 2.33 miles S of Sappho Point, and is entered between Hope Point and Hobart Rock.

Hope Point (54°17'S., 36°30'W.) is a rocky bluff 15m high that is covered with tussock grass. Upon this point is a conspicuous monument, comprised of a stone cairn surmounted by a white cross, 1.5m high. A conspicuous dark green building is situated 183m WNW of Hope Point.

Hobart Rock, which lies on the S side of the approach to the cove, is 0.5m high, and is surrounded by banks of kelp which extend from the rock to the coast about 0.2 WSW.

King Edward Point (54°17'S., 36°30'W.) is a low promontory on the N side of the cove. It is the only permanently inhabited place on the island. King Edward Cove is the only port of entry for the island of South Georgia.

The controlling depth for entry into the cove is 13.4m. The maximum draft at the berth is 7.8m alongside the jetty on the W side of King Edward Point. The jetty head is 25m long and vessels up to 125m long can be accommodated.

The cove occasionally freezes over. The local weather is unpredictable and changes rapidly.

King Edward Cove is free of hidden dangers. Numerous stranded wrecks litter the shore line. Kelp, which extends as much as 183m from the S shore, marks the shoal areas around the edges of the cove. Both the N and S shores of the cove are foul within the kelp line.

King Edward Point Light stands close E of the SW extremity of the point. Close N and 100m ENE of the light tower are two radio masts, 28 and 32m.

Two leading lines have been established, the outer line leads through the approaches and the inner line leading within the cove. The outer leading beacons, located on the S side of the cove, lead bearing 282°. The inner leading beacons, located at the head of the cove, lead bearing 304.5°. The recommended track into the cove is to steer 282° along the outer leading line between Hope Point and Hobart Rock, turning to starboard as required to berth at King Edward Point jetty.

If bound for Grytviken, course should be altered S of King Edward Point to steer 304.5° along the inner leading line.

Anchorage.—Anchorage outside the cove can be found in 30m, 0.3 mile ESE of Shackleton Cross, with mud bottom and good holding. A second anchorage is available 0.5 mile NE of Dartmouth Point in 25m.

In E winds ice may prove troublesome to vessels anchored outside the cove.

Grytviken (54°16'S., 36°30'W.) ([World Port Index No. 14060](#)) is situated at the head of King Edward Cove, and is the site of the former principal settlement in South Georgia.

There are two wharves at Grytviken, both reported in poor repair. Grytviken N can accommodate a vessel with a draft of 6 9m and a length of 75m.

Grytviken S can accommodate a draft of 5.8m and a length of 90m.

An alternative track into King Edward Cove is to steer 288° on the mast of the conspicuous stranded wreck lying S of Grytviken. Then steer 308° with the Grytviken church spire ahead. Kelp marks the shoal areas around the edges of the cove.

10.73 Skrap Skerries (54°15'S., 36°19'W.), comprised of East and West Skerry, lie 2.5 and 3.5 miles, respectively, ESE of Barff Point. Alert Rock, which is awash, lies about 1 mile W of West Skerry. Also, patches of kelp, over which the sea breaks in heavy weather, lie within 1.25 miles N of West Skerry.

Cobblers Cove (54°16'S., 36°18'W.) is entered 0.5 mile W of Long Point. Vessels with local knowledge can find good, but restricted, anchorage, in depths of 12 to 20m, sand. Babe Island lies on the W side of the channel and is separated from the mainland W by a narrow rock encumbered channel. The entrance to the cove is narrow, deep and clear of dangers.

Godthul Bay (54°17'S., 36°17'W.) is entered between Long Point and **Cape George** (54°17'S., 36°15'W.). This bay affords good anchorage in depths of 33 to 37m, mud, in its SE part. While this berth is sheltered from S and SW winds the rest of the bay is almost always subject to a heavy swell.

A rock, whose charted position is approximate, and which only shows in a heavy sea, lies 1 mile ENE of Cape George.

Also, breakers have been reported about 1 mile NNE of Cape George.

It was reported that the coastline between Cape George and Cape Charlotte, 20 miles SE, differs considerably from that shown on the chart. The salient points along this stretch provide a reasonable fix, but other headlands and bays cannot be relied upon.

Nansen Banks (Nansen Reef) is a rocky, steep-to ridge, which lies from 2.5 to 4 miles ESE of Cape George. There are depths less than 1.8m E end, and the sea breaks upon it when there is a heavy swell.

Ocean Harbor (54°20'S., 36°14'W.) is entered 3 miles SSE of Cape George and provides good anchorage, for those vessels with local knowledge, in the central part in depths of 14.6 to 18.3m, mud. This berth is sheltered from all winds, but a heavy E swell sets in at times causing a ground swell 91m from the head of the bay. A large three-masted vessel lies at the head of the harbor.

Penguin Bay, the S entrance point of which is **Tijuca Point** (54°20'S., 36°12'W.) is entered S of Ocean Harbor; it is kelp-infested and provides no anchorage.

It was reported that a patch of kelp, attached to the sea bed in a position about 2.2 miles E of Tijuca Point suggested the existence of a possibly dangerous shoal.

Hound Bay is entered about 5 miles SSE of Cape George. Rolf Rock, 4m high, lies 1.25 miles W of Cape Vakop, the S entrance point of this bay.

Vessels with local knowledge can obtain sheltered anchorage in this bay in depths of 18 to 27m.

Cape Vakop (54°22'S., 36°10'W.) is the tip of a thin tussock-covered headland with a height of 102m.

A ridge of rocks projects NE of the cape and terminates in a massive tussock-topped stack, 61m high.

Calf Head (54°28'S., 36°04'W.), lies about 7 miles SE of Cape Vakop, reported to lie about 0.5 mile NE of its charted position.

Cape Harcourt (54°30'S., 36°00'W.), low and tussock-covered, is the E extremity of Harcourt Island, which lies close off the head of a promontory about 3 miles SE of Calf Head.

10.74 Royal Bay (54°30'S., 35°55'W.) is entered between Cape Harcourt and Cape Charlotte, 4.5 miles SE. This bay is not well sheltered, and is subject to frequent violent winds that blow out of this bay. Foul ground lies on the N side of the bay 1 mile ESE, and between 0.5 and 2 miles SW of Cape Harcourt.

Moltke Harbor is a small cove on the NW side of Royal Bay entered between Pirner Point and Koppen Point 1.75 miles NE. This harbor is difficult to distinguish because of the low land on the N side.

Off the entrance, two glaciers will be observed in the bight, and between them is a black rock, 24m above HW, that stands out well against the snow-covered mountains. The harbor is not immediately identifiable from the entrance to Royal Bay.

Vessels can secure anchorage in depths of 14 to 27m, mud, in the middle of the bay. This berth is sheltered from WSW, through N to ENE. However, it is open to other quarters, especially ENE to ESE.

Strong W winds blow here with squalls of hurricane violence, setting in from SW and shifting to NW. Also, SE winds send a heavy sea into the bay, and when these winds



South Georgia—Drygalski Fjord—Larsen Harbor

blow (usually of less than 24 hours duration), it is recommended that vessels put to sea.

In calm weather, with an E swell, drifting ice is brought into the bay by the flood current. The tidal rise is much influenced by the wind. The currents set fairly in and out of the bay with a velocity of 0.5 knot.

In the offing the current has been observed to set NE at a rate of 0.5 to 1 knot and close to the coast it set ESE.

Directions.—Vessels with local knowledge approaching from NW steer to keep Cape Charlotte bearing 180° until the S edge of Ross Glacier, at the head of Royal Bay, bears 245° , changing course to that heading.

When the N edge of Ross Glacier bears 268° , change course to that heading. Change course to 310° to keep the tongue of land in the center of Moltke Harbor.

10.75 Cape Vahsel ($54^{\circ}45'S$, $35^{\circ}48'W$.) lies about 14 miles SSE of Cape Charlotte, and the coast between is broken exposed and largely unsurveyed.

Filchner Rocks, which are submerged as well as above-water, lie 3 to 4 miles NNE of Cape Vahsel.

Adequate anchorage has been found in a depth of 33m, 1.5 miles S of Cape Vahsel.

Gold Harbor ($54^{\circ}37'S$, $35^{\circ}56'W$.) is entered between Gold Point, about 10 miles SSW of Cape Charlotte, and a point 1.25 miles SSW.

Small craft can obtain good sheltered anchorage in a depth of 14.6m fairly close inshore.

Larger vessels can find a sheltered anchorage in about 25m, 0.6 mile S of Gold Point.

Cooper Sound ($54^{\circ}48'S$, $35^{\circ}49'W$.) is situated between Cooper Island and the entrance to Cooper Bay, S of Cape Vahsel. A 14m patch lies 2 miles E of Cooper Island and foul ground extends W from the same island. Indifferent anchorage may be obtained by small vessels with local knowledge in the SW part of Coopers Bay.

Clerke Rocks ($55^{\circ}01'S$, $34^{\circ}42'W$.), which lie from 35 to 40 miles ESE of Cooper Island, consist of two groups. The W group includes three large rocks, one of which is about 244m high. The E group, one of which is large, includes The Office Boys, which attain an elevation of 82m, and Nobby Rock.

A shoal, with a depth of 31m, lies 5.5 miles SW of Clerke Rocks. A patch of kelp, the position of which is approximate, has been reported to lie 4 miles ESE of Nobby Rock.

10.76 Drygalski Fjord ($54^{\circ}50'S$, $35^{\circ}55'W$.), which indents the SE tip of South Georgia, is entered between the SW entrance point of Hamilton Bay and Nattriss Head, 3 miles SW.

This fjord is notable for a steep rocky ridge on its NE side that is overlooked by the high peaks of the Salvesen Range.

The SW side is reported to be less precipitous with two minor glaciers.

Larsen Harbor ($54^{\circ}50'S$, $36^{\circ}00'W$.) is entered on the S side of Drygalski Fjord, and is well sheltered.

Squalls occasionally blow down the valley at the head with great force.

Fairway Rock, with a depth of 2.4m, lies in the middle of the harbor, 1 mile within the entrance.

Vessels passing this rock should maintain about 91m off the N shore, where the depth is 4.6m.

Anchorage.—Small vessels with local knowledge can find anchorage in the E part of the harbor in depths of 7 to 14m, or in depths of 14.6 to 20m in its W section.

Esbensen Bay (54°52'S., 35°58'W.) is entered between the S point of **Nattriss Head** (54°51'S., 35°56'W.) and Shannon Point, 1 mile SW. Vessels with local knowledge can find anchorage in this bay. Doubtful Bay, 2 miles WSW of Esbensen Bay, is a good harbor for small craft, with depths of about 64m.

Rocks, awash, are situated in the 0.5 mile wide entrance, and it should not be entered without local knowledge.

Smaaland Cove is entered about 2 miles W of Doubtful Bay and affords good anchorage within for small craft.

10.77 The SW coast of South Georgia, from Cape Disappointment to Cape Nunez, about 60 miles NW, is not as well known as the rest of the island. Steep, heavily crevassed glaciers, and precipitous black headlands appear in a regular alternating pattern.

From Cape Nunez to Cape Paryadin, 24 miles NW, the coast is indented by several harbors.

Kupriyanov Islands (54°45'S., 36°19'W.) lie about 10 miles NW of Cape Disappointment. Dias Cove, close N of the islands, may afford anchorage, but due to its recent discovery

and unexamined status it is not recommended. The approaches to the cove are encumbered with islets and rock.

Novosilski Bay (54°39'S., 36°22'W.), into which a large glacier flows, is 6.5 miles NNW of the Kupriyanov Islands. Nilsen Island, 30m high, lies 2 miles W and Jonassen Rocks, 3m high, 1 mile SW of Novosilski Bay.

Between Novosilski Bay and Leon Head, 12 miles NW, there are two below-water rocks, over each of which the sea break. The rocks lie 0.75 mile offshore, 5.5 miles NW and about 3 miles WNW of **Mount Fraser** (54°38'S., 36°21'W.), respectively.

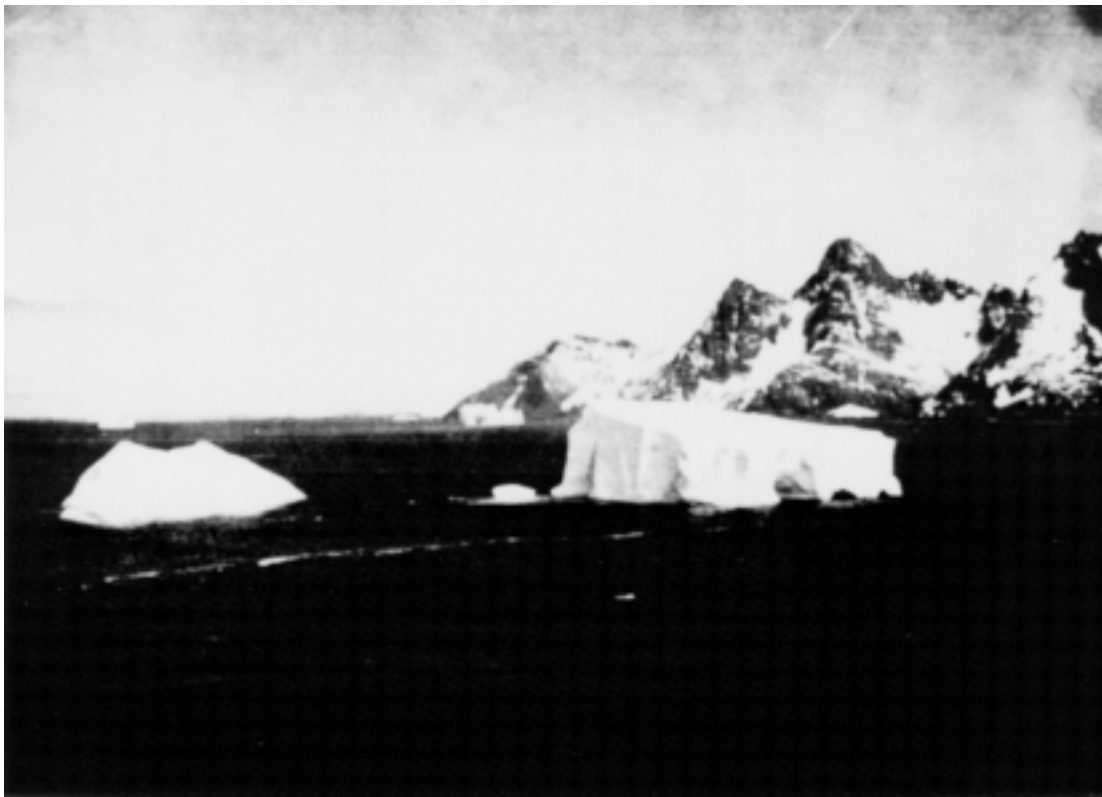
Undine South Harbor (54°32'S., 36°33'W.) is entered between Leon Head and Ducloz Point, 5 miles NW. This large bay, which is broken up by Austin Head, a conspicuous dark promontory, does not afford any shelter. A below-water rock lies in the middle of the harbor.

Rocky Bay (54°30'S., 36°40'W.) is entered N of Ducloz Head. While this bay could afford anchorage those vessels with local knowledge, the approaches are encumbered by rocks. Breakers project up to 2 miles offshore.

Hauge Strait is a deep channel 1.5 miles wide that lies between Hauge Reef and the rocks that extend W from **Cape Darnley** (54°27'S., 36°49'W.).

This strait is frequently used by vessels of the British Antarctic Survey that should have local knowledge.

Annenkov Island (54°30'S., 37°04'W.) lies about 10 miles WSW of Cape Darnley.



South Georgia—Nattriss Head

Vessels of the British Antarctic Survey have found anchorage with the E tip of Annenkov Island bearing 190°, distance 1.4 miles, in a depth of 22m.

Tussock Island lies close to the coast of Annenkov Island, NE of Mislaid Rock.

A patch of kelp was reported to lie 4.5 miles NW of Mislaid Rocks.

Low Reef extends ENE from the E tip of Annenkov Island joining Hauge Reef. Pillow Rock, which stands near the ENE tip of Hauge Reef, is comprised of pillowed lavas.

Theodor Rock, which breaks when there is any swell, lies 7 miles S of Annenkov Island. Pickersgill Islands, the highest of which is 146m, lie 11.5 miles SE of Annenkov Island and 7.5 miles offshore. A shoal, with a depth of 19.2m, was reported to lie 2 miles ENE of Pickersgill Islands.

10.78 Fanning Ridge (54°20'S., 37°03'W.) lies about 11 miles NW of Cape Darnley.

Aspasia Point (54°19'S., 37°06'W.) is a very prominent steep headland that marks the W end of Fanning Ridge. Fanning Ridge, dark, precipitous, and rocky, is from 610 to 915m high with a serrated skyline.

During the summer months, Fanning Ridge is the best and only unmistakable long distance landmark on the SW coast of South Georgia. It is as recognizable from a distance of about 50 miles as it is from a distance of 15 miles.

The appearance of this feature during winter months is undetermined.

Breakers have been reported about 1 mile offshore, midway between the above headland and Newark Bay.

10.79 Cape Nunez (54°16'S., 37°25'W.) is the SW tip of the large rocky and relatively snow-free Nunez Peninsula.

Vessels with local knowledge can obtain good anchorage in Holmestrand, a bay on the S side of the Nunez Peninsula, 6 miles E of Cape Nunez.

This berth is in depths of 14.6 to 18.3m, mud. This bay is sheltered, but, in E and SE winds the bay fills up with ice from the large glacier which lies on its E side. The approach to this bay, which is encumbered with rocks and breakers, is via a narrow channel that leads N towards a conspicuous black rock located in front of the glaciers.

Vessels are advised to anchor close up to the NW corner of the bay and not more than 183m off the glacier face, which in E gales provides a convenient lee. There is a possibility of hurricane force squalls when the wind blows off the land.

Queen Maud Bay is entered N of Cape Nunez, and is bounded by the steeply rising N side of the Nunez peninsula on the S and the spiky summits of the Cape Rosa Peninsula on the N. Three towering black dolomites lie close E of Shallop Cove. Vessels with local knowledge can obtain good anchorage here in 22m at its head 0.35 mile NW of the S entrance point to Shallop Cove.

This berth is sheltered from all but the strongest SW winds, when a heavy swell enters the bay.

King Haakon Bay is entered N of **Cape Rosa** (54°11'S., 37°25'W.) and affords good anchorage for those vessels with local knowledge. McNeish Island, McCarthy Island and Vincent Islands lie, respectively, 2.75 miles NW, 1 mile NNW, and 5.25 miles ENE of Cape Rosa. Rocks lie between 1.25 and

2.5 miles WNW of Cape Rosa. Also, a large patch of kelp lies between these rocks and McNeish Island.

The best approach to the head of the bay, where anchorage can be taken, is along the N coast N of McNeish Island, with depths of 22 to 53m, and N of McCarthy Island. There is a passage close N of Cape Rosa but it should be navigated with caution.

10.80 Klutschak Point (54°10'S., 37°41'W.) is the NW entrance point of the large bight which contains King Haakon and Queen Maud Bays. A kelp covered shoal, whose position is approximate, with a depth of 8.2m, lies 4 miles SE of Klutschak Point, and 2 miles offshore.

Cape Demidov (54°09'S., 37°44'W.), 0.5 miles NW of Klutschak Point, is steep and rocky with many off-lying islets and rocks radiating from it. Anvil Stacks, two prominent tussock-covered islets, lie about 2 miles SE of Cape Demidov.

Wilson Harbor, entered between Cape Demidov and Kade Point, 2 miles N, affords anchorage to those vessels with local knowledge in its NE corner.

This berth, in depths of 20m, mud and sand, is sheltered from most winds.

However, SE winds of great intensity occasionally blow off Schrader Glacier, situated at the head of the harbor.

A shoal, with a depth of 18m, was reported to lie 7 miles WSW of Kade Point. Also, a rock on which the sea breaks, lies 0.75 mile WNW of Kade Point.

The harbor and the middle of the entrance between Kade Point and Saddle Island appears to be clear of dangers. There is a 91m wide channel between Saddle Island and Cape Demidov that also appears to be clear.

Ice Fjord is entered between Kade Point and Weddell Point, 4 miles NW. Vessels with local knowledge can find good anchorage here about 1 mile from the head of the fjord in 18m on a gently shelving bottom.

Schlieper Bay, entered about 1.2 miles W of Weddell Point, affords good anchorage in a depth of 18m, but the entrance is reported to be foul.

Coal Harbor (54°03'S., 37°53'W.) lies about 7 miles NW of Cape Demidov. It has good anchorage for small vessels with local knowledge in 16.5m. There is a reef across the entrance and the passage between this and the land on the S side is clear but narrow. Vessels must keep close to the kelp on the south side when entering the harbor.

The approaches to this harbor are encumbered by reefs which may not be marked by kelp owing to their being cleared by stranded ice.

10.81 Undine Harbor (54°02'S., 37°57'W.) lies about 0.75 mile W of Coal Harbor. The harbor is protected from all winds except those from the SW and S.

Vessels with local knowledge can obtain anchorage in depths from 14 to 29m. The bottom on the E side of the anchorage is sand and the W side is mud. The entrance is partially blocked by kelp and is about 0.1 mile wide.

Johan Harbor is entered 1 mile SW of Undine Harbor and vessels with local knowledge can obtain anchorage in depths of 27m, on sand and pebble.

However, the holding ground here is not good and not recommended with winds between SE and NE.

Directions.—From the vicinity of Stewart Strait vessels with local knowledge bound for Johann Harbor, Undine Harbor, or Coal Harbor should remain at least 0.5 mile SW of **Jomfruene** (54°04'S., 38°03'W.) and 1 mile SW of **Cape Paryadin** (54°04'S., 38°01'W.).

Vessels can then pass 0.5 mile S of Olsen Rock and head ENE giving a wide berth to the rock. Olsen Rock's position as charted is doubtful, 1 mile E of Cape Paryadin. However, it was reported that this rock was clearly visible, and appeared to lie about 183m SW of its charted position.

When Johann Harbor can be approached on a heading of 345°, this course should be steered passing about 0.1 mile E of Laurie Island.

Caution.—Vessels should exercise caution in the approaches to these harbors as they have not been completely surveyed and require local knowledge for entry.

South Sandwich Islands

10.82 Winds—Weather.—The prevailing SW winds are deflected in the vicinity of the islands into a circular motion around the islands.

The general weather patterns in the group are cloudy with fog or snow, and clear and cloudless days are rare. Mountain summits are almost always hidden by low clouds.

Tides—Currents.—The prevailing set of the current is to the NE. In Nelson Strait, in the Candlemas Islands, and in the Douglas Strait, in the South Thule Islands, a S set of about 1 knot was experienced.

Aspect.—The South Sandwich Islands consist of an archipelago of islands, most of which are volcanic. The N island, Zavodovski, is situated about 297 miles ESE of South Georgia. All of these islands are uninhabited and snow and bad visibility are frequent making the approaches difficult.

The South Sandwich Islands are completely surrounded by pack ice from the Weddell Sea during the late winter and spring. During summer conditions vary, the N islands should be free of ice about the end of November and the more S islands a few weeks later.

Many tabular, weathered, black/white bergs, sometimes grounded, will be seen around the islands.

Anchorage.—These islands are without harbors, but at many of them are anchorages where a vessel would find shelter. Ferguson Bay, in Southern Thule, affords the best anchorage, but because of its location it will often be unavailable due to ice. The next best anchorages are in Nelson Strait in the Candlemas Islands.

This strait affords shelter from most winds and may be free of ice for a slightly longer period than Ferguson Bay.

10.83 Zavodovski Island (56°20'S., 27°35'W.) is formed by Mount Curry, a volcanic cone about 550m high. The W shore is precipitous with sheer cliffs falling abruptly to the sea. From the N to the SE side of the island there is a low-lying plateau rising to the base of the cone.

This plateau is for the most part free of snow except for some patches near its seaward limit. Also, the plateau ends in low, black cliffs 9 to 12m high. The crater is constantly erupting. The shore line is cliffy but there are two sandy beaches of black sand or lava.

Close inshore of the island, W and NW, are depths from 91 to 183m. On the E and SE sides there are depths of 26 to 37m less than 1 mile from shore, good holding ground of scoria and boulders. The swell carries around the island making it necessary to shift berth as the wind changes.

A shoal, with a least known depth of 27m, was reported to lie 27 miles NW of Zavodovski Island.

Visokoi Island (56°43'S., 27°09'W.) is located about 25 miles SSE of Zavodovski Island, and is also a single volcanic cone. The summit, Mount Hodson, is 1,005m high and is generally obscured by smoke or steam.

From most directions this glacier covered island appears a rounded mass with a steep coast. The largest offshore rock, Coffin Rock, lies about 1 mile SE of Finger Point, the N tip of the island. The most conspicuous rock is a pinnacle rock off the NW side of the island.

There are possible anchorages N or S of Irving Point but the swell carries around and no good protection is afforded.

Leskov Island (56°40'S., 28°08'W.), which lies 30 miles W of Visokoi Island, has a flat summit and is precipitous.

A prominent cone-shaped rock, 114m high, is located at the SE tip.

Crater Bay, on the NE side of this crescent-shaped island, is flanked by sheer walls of rock falling almost straight down from the summit to the sea. Since Leskov Island is steep-to on all sides, there is no place where a vessel might anchor.

Candlemas Islands (57°05'S., 26°44'W.), comprised of two islands, separated by Nelson Channel lies about 23 miles SE of Visokoi Island. The E island is known as Candlemas Island and the W as Vindication Island.

Candlemas Island, whose S end is buried into a glacier, rises to two peaks, Mount Andromeda, 549m high, and Mount Perseus, close N. The N part of the island is comprised of lava, and rises to Lucifer Hill, a 235m high volcanic cone.

The N and S parts of the island are joined by a wide stretch of low-lying land. Demon Point is the NE tip of the island and the E entrance of Kraken Cove. Within this cove is a steeply shelving beach of black sand and boulders.

Black Rock, 24m high, lies 0.6 mile off the NE side of the island. The NW coast is bordered by basalt cliffs about 9 to 12m high.

10.84 Vindication Island (57°06'S., 26°47'W.), the W island, rises to a height of 427m in its SW part. Crosscut Point, on the NW coast, ends in a row of pointed rocks.

Buddha Rock, a prominent rock, 37m high, lies 0.3 mile from the W tip of the island, Knob Point.

A bank, with a depth of 108m, lies 3 miles S of Knob Point. Saw Rock and Santa Rock, both conspicuous, lie, respectively, 1 and 1.5 miles NNW of Crosscut Point.

There is a reef that projects NE to about midway across Nelson Channel from Low Point, the NE tip of Vindication Island. Cook Rock and Trousers Rock, both arched, stand on the reef.

Nelson Channel should only be navigated by vessels with local knowledge. The least depth that has yet been found in the fairway is 11m. It has been reported that there are greater depths closer to the reef extending NE from Low Point.

Anchorage.—The best berth, for vessels with local knowledge, lies off the E side of Vindication Island between

Cook Rock and Rocky Point, the SE tip of Vindication Island, in a depth of 20m, good holding ground.

There is good anchorage S of Candlemas Island during N winds, and NE of Vindication Island, 0.4 mile ENE of Crosscut Point, during S winds.

Saunders Island (57°47'S., 26°27'W.), crescent-shaped, lies with its N tip, Harpers Point, about 41 miles S of Candlemas Island. Mount Michel, 990m high, is located in the center of the island. On the SE corner of the island is a promontory comprised of bare hills. On the S side of these hills is a notable half section of a crater, scored with radial grooves. When approaching from S this crater is a conspicuous mark.

Off the NE side of Cordelia Bay, which forms the NE side of the island, are several rocks, the highest being Brothers Rocks. These rocks lie in the vicinity of three reefs, with foul ground and breakers that close the N entrance to the bay.

Vessels with local knowledge can obtain good anchorage W of a group of rocks near Natriss Point.

This berth, in depths of 24 to 26m, is sheltered from NW, through S to SW, and lies close inshore in the S part of the bay. The bottom shelves steeply around the island except outside the reefs fronting the bay where there is a larger area with depths of less than 37m.

10.85 Montagu Island (58°25'S., 26°22'W.) is the largest of the South Sandwich Islands and lies 34 miles S of Saunders Island and is reported to be larger than charted.

Mount Belinda, 1,371m high, is the summit of the island and is heavily glaciated. Allen Point is the tip of the headland that forms the SE point of the island, and it rises to a cone-shaped hill, Mount Oceanite, 914m high.

A rock, awash, lies close off the E side of the headland, 0.5 mile N of Allen Point. Between Allen Point and Scarlett Point, 2.75 miles WNW, is Phyllis Bay.

Anchorage.—Vessels with local knowledge can secure good anchorage, in depths of 36m or less, on either side of Allen Point. The anchorage to the N of the point affords protection from NW to SW, and that in Phyllis Bay, from NW to N to SW. Allen Point stops the swell from following round.

To the NE of the island shallow water reportedly extends for some distance seaward.

Bristol Island (59°03'S., 26°34'W.), which is glaciated, lies 32 miles S by W of Montagu Island, and is reported to be larger than charted. Mount Darnley 1,097m high, lies S of its center. The S side of the island, the S tip of which is Harker Point, rises steeply in a great rocky bluff 580m high.

Three rocky islets with a bold appearance lie W of the island. The outermost islet, lying 3 miles W of Bristol Island, is remarkable for a towering pillar rock 305m high, and a lesser summit 190m high. This rocky islet was the landfall Captain Cook made when he discovered the South Sandwich Islands. It is now known as Freezland Rock. The middle inner rocks, named Wilson Rock and Grindle Rock are 183m and 213m high, respectively.

It is possible to anchor, with good holding ground and protection from wind, anywhere off the N and E sides of

Bristol Island. However, due to the shape of this island the swell follows round, whatever its direction. There are navigable passages between Grindle and Wilson Rocks, and between Wilson Rock and Freezland Rock.

Between Grindle Rock and Bristol Island there is a continuous breaking reef.

10.86 Southern Thule (59°27'S., 27°17'W.), about 27 miles SW of Bristol Island, and separated from it by Forsters Passage, is comprised of three islands.

Bellingshausen Island is the most E and smallest of the group. This island is separated from Cook Island by Maurice Channel, which is 1.5 miles wide, with depths in the center of 25 to 31m. Bellingshausen Island has upon it a single volcanic cone which ends abruptly in the ragged edges of a crater, and reaches a height of 253m on its N part.

Cook Island, the largest and highest of the group, has upon it three ice-capped peaks of which Mount Harmer is the highest, reaching an elevation of 1,077m. The shores are precipitous, alternating between steep, rugged cliffs with glaciers hanging above them, and glaciers reaching the waters edge.

10.87 Thule Island (59°27'S., 27°23'W.), the W island of the group, is buried beneath an ice cap, but a jagged ridge of black rock sticks through the ice in the center of its SW side at Wasp Point. The SE part of Thule Island is made up of a low plateau ending S in Hewison Point.

Ferguson Bay, the best anchorage in the South Sandwich Islands, is entered between Hewison Point and Herd Point, about 0.5 mile W. It has been reported that this berth lies about 0.3 mile WNW of the E entrance point, and affords good holding ground with shelter from all winds except from S. A metal beacon stands on Herd Point. The Argentine scientific station is located at the head of Ferguson Bay. A refuge hut lies 0.5 mile W of the lighted beacon. A wood beacon painted in red and white stripes marks the hut.

Twitcher Rock, 55m high and conspicuous, lies 0.5 mile E of Hewison Point. The channel between this rock and the point is foul.

10.88 Douglas Strait (59°28'S., 26°17'W.) is situated between Cook and Thule Islands.

This strait, which requires local knowledge for use, has depths in its central part of over 731m, but its N and S entrances have depths of less than 37m.

The N entrance is closed for a great part of its breadth by a reef with sunken rocks extending E from Beach Point, the NE extremity of Thule Island, with a 13m patch close off its outer end; a 9.1m patch was reported to lie close SE of the 13m patch.

The S entrance is narrower and lies between the end of the rocks off Reef Point, the SW extremity of Cook Island, and Twitcher Rock, from which shoal water extends toward Thule Island. A S current of about 1 knot sets through the strait.

A bank, with a least charted depth of 84m, the position of which is approximate, lies about 28 miles SW of the W extremity of Thule Island.